

ANNUAL SANITARY REPORT

OF THE

PROVINCE OF ASSAM

FOR THE YEAR

1914

BY

THE HON'BLE COLONEL H. E. BANATVALA, I.M.S.,  
SANITARY COMMISSIONER, ASSAM.



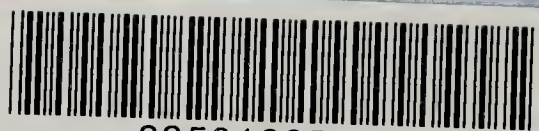
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PRINTED AT THE ASSAM SECRETARIAT PRINTING OFFICE.

1915.

*Price Twelve Annas.]*

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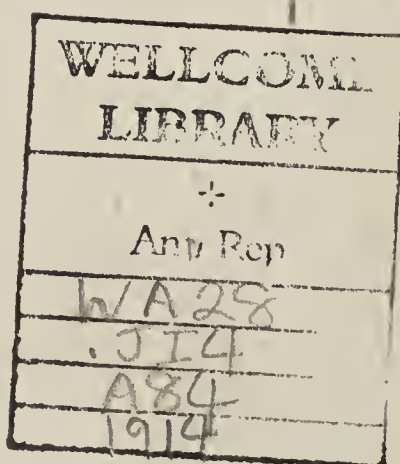
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FROM

THE HON'BLE COLONEL H. E. BANATVALA, I.M.S.,  
SANITARY COMMISSIONER, ASSAM,

TO

THE SECOND SECRETARY TO THE CHIEF COMMISSIONER  
OF ASSAM.

*Shillong, the 7th May 1915.*

SIR,

I HAVE the honour to submit herewith the Annual Sanitary Report of the Province of Assam for the year 1914.

I have the honour to be,

SIR,

Your most obedient servant,


H. E. BANATVALA, *Colonel, I.M.S.,*

*Sanitary Commissioner, Assam.*

*Enclosures :—*

1 Report.

13 Statements.



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# ANNUAL SANITARY REPORT

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## PROVINCE OF ASSAM

FOR THE YEAR

1914.

### SECTION I.

#### METEOROLOGY.

The Director General of Observatories has furnished the following brief summary of the chief meteorological features prevailing in the province during the year 1914:—

*“The cold-weather period, January and February.—*As in 1913, the month of January was unusually dry, while in February rainfall was largely above the average. In other respects weather was fairly normal.

*“The hot-weather period, March to May.—*There was less cloud than usual and rainfall was in defect except at Silchar and Shillong. In April, temperature was below normal.

*“The monsoon period, June to September.—*Very heavy rain fell from the 11th to the 16th June, particularly in the Khasi Hills, the rainfall for one day at Cherrapunji amounting to 31 inches. Taken as a whole, however, the rainfall of June was in defect, while for the remaining months of the period it was approximately normal. There was considerably less cloud than usual. Temperature and humidity were fairly normal.

*“The period, October to December.—*The rainfall in December was equal to the small amount usually received in that month, but during the rest of the period rainfall was much below the average. In October cloud was in defect and temperature was lower than usual.”

The average price of common rice ranged from seven and half seers to the rupee in Sylhet, Kamrup and Darrang, to eight and one-fourth seers in Lakhimpur, Cachar and Sibsagar.

Price of food-grains and their connection with vital occurrences.

The agricultural outturn of the province during the year was on the whole normal.

### SECTION II.

#### EUROPEAN ARMY.

[No remarks.]

### SECTION III.

#### NATIVE ARMY.

[No remarks.]

### SECTION IV.

#### JAILS.

[No remarks.]

### SECTION V.

#### GENERAL POPULATION.

##### *Vital Statistics.*

2. The population of the province according to the census of 1911 is 7,059,857 including Manipur State. The population of the plains districts is 6,051,507, of which 3,139,897 are males and 2,911,610 females. The ratios throughout this report have been calculated on the census population of 1911 and not on the population corrected for an intercensal year.

General census figures. Provincial birth and death-rates. Comparison with other provinces.

The population of the hill districts and Manipur State is 1,008,350. Registration is only partially carried out in these districts. The areas under registration comprise a population of 192,656, of which 54,228 is contributed by the Khasi and Jaintia Hills, 91,204 by the Lushai Hills, 44,801 by the Garo Hills and 2,423 by the Naga Hills. The result of the registration in these hill districts is shown separately in paragraph 10 of the report and is not included in the general statistics.

The following statement compares the birth-rate in Assam with that of other provinces in India :—

Provinces.					Birth-rate.		
					1908-1912.	1913.	1914.
1					2	3	4
Assam	...	...	...	...	32·09	33·06	32·94
Bengal	...	...	...	...	35·27	33·75	33·86
Bihar and Orissa	...	...	...	...	39·90	42·10	42·38
Central Provinces	...	...	...	...	51·52	49·26	51·37
Madras	...	...	...	...	32·0	32·2	33·5
Burma	...	...	...	...	34·20	32·61	35·40
Bombay	...	...	...	...	35·92	34·96	37·43
United Provinces	...	...	...	...	40·20	47·67	44·93
Punjab	...	...	...	...	42·3	45·40	46·28
North-West Frontier Province	...	...	...	...	35·0	36·17	32·7

The following statement compares the death-rate in Assam with that of other provinces :—

Provinces.					Death-rate.		
					1908-1912.	1913.	1914.
1					2	3	4
Assam	...	...	...	...	27·61	27·66	24·66
Bengal	...	...	...	...	28·78	29·38	31·57
Bihar and Orissa	...	...	...	...	34·24	29·14	28·32
Central Provinces	...	...	...	...	38·62	30·28	36·69
Madras	...	...	...	...	23·1	21·4	25·0
Burma	...	...	...	...	27·63	24·99	24·13
Bombay	...	...	...	...	29·60	26·63	29·48
United Provinces	...	...	...	...	40·72	34·84	33·46
Punjab	...	...	...	...	35·4	30·20	31·96
North-West Frontier Province	...	...	...	...	26·0	24·65	25·8



3. The provincial birth-rate for the year was 32·94. This is ·12 in defect as compared with the previous year, but ·85 in excess of the mean of the quinquennium 1908-1912.

Birth registration—General.

During the year a total of 199,343 births was registered, which yielded a ratio of 32·94 per mille of population. The highest rate, 39·90, was recorded in the district of Goalpara. The next highest rates, *viz.*, 35·47 and 33·16, were recorded in the districts of Darrang and Sibsagar, respectively. The districts of Sylhet and Cachar in the Surma Valley recorded rates of 32·34 and 31·82, respectively. The lowest rate, 28·45, was recorded in the district of Lakhimpur, presumably for the reasons stated in my report of the previous year.

Compared with the mean ratio of births during the previous five years, there was an increase of ·93 per mille during the year under report. The highest increase, 4·13, was recorded in Sibsagar. Nowgong in the Assam Valley and the districts of Cachar and Sylhet in the Surma Valley showed a slight decrease. The birth-rate exceeded the death-rate by 8·28 as compared with the corresponding figure of 5·4 in the previous year, and the increase has been shared by all the districts. While our efforts at attaining greater accuracy in registration would tend to inflate this figure as the defect in reporting is usually greater in regard to births than deaths; on the other hand, the intercensal increase in the population over and above that on which the ratios are calculated tends to reduce it. From these considerations it is probable that the recorded increase is a real one and it seems justifiable to assume some improvement in the general health conditions in the province as compared with those of the previous year.

4. In the month of October Act IV (B.O.) of 1873 for registration of births and deaths was extended to the Union of Nazira in the district of Sibsagar. The urban areas of compulsory registration consisted of 21 towns against 20 in the previous year.

Birth registration in urban areas.

The total number of births registered in urban areas during the year 1914 was 3,272 and the birth-rate per mille of population was 26·64, as compared with 3,307 and 27·50, respectively, in the preceding year. As in previous years, the highest rate, 59·4, was recorded in the town of Barpeta followed by 50·53 and 42·82 in Golaghat and Jorhat, respectively.

As was pointed out in last year's report, the result of a special enquiry in that year was to unduly inflate the birth-rate by the inclusion of the omissions of previous years, and this source of error has been eliminated from the figures of the year under consideration. The decrease is therefore more apparent than real. The lower figure of the urban as compared with the rural birth-rate is due to the different age and sex composition of the populations in question.

Rates of 11 and below were recorded in Sunamganj, Hailakandi and Karimganj, although the attention of the Civil Surgeons concerned had been drawn to the defective registration in these towns, and the Vaccination Inspecting Staff was directed to check the registers frequently with a view to find out omissions. Thirty-three vital occurrences were checked in Hailakandi, six omissions were discovered and the defaulters were prosecuted. In Maulvi Bazar, Karimganj and Sunamganj 91, 68 and 187 entries, respectively, were checked and 4, 63 and 154 omissions, respectively, were detected. New municipalities were established at Sunamganj and Karimganj, a Union was constituted at Maulvi Bazar, and the Habiganj Union was converted into a Municipality, and for this reason the Registration Act in these towns had to be re-introduced to make the boundaries of the original compulsory areas coincide with those of the newly established municipal areas.

5. The total number of births registered in rural areas during the year was 196,071, or 33·07 per mille of population, as compared with 196,768 and 33·17, respectively, in 1913.

Birth registration in rural areas.

Considering registration circles individually, the highest rate, 76·35, was recorded in the Guma registration circle of Goalpara. The Nalbari circle in Kamrup, the Kanairghat circle in Sylhet, the Santal Colony circle, the 1st and 2nd circles and 3rd circle of Sidli, and that of the Bijni Duars, all in the district of Goalpara, recorded birth-rates between 50 and 60. The rate was between 40 and 50 in six circles in Goalpara district, in three in Darrang, in one in Sibsagar, and in one in Nowgong. Rates below 20 were recorded in Sonari circle (18·04) in Sibsagar, and in Doomdooma circle (15·90) in Lakhimpur. A special enquiry into registration in Polashbari circle was conducted during the year and a large number of omissions was detected. The recorded birth-rate in this circle rose from 17·03 to 24·13 as the result of this investigation, regarding which please see paragraph 16 of this report. The Lumding



circle in Nowgong, which is also an area of defective registration, shows signs of improvement, the rate rising from 13·80 to 23·11 as the result of special attention by the Civil Surgeon and his staff. No special enquiry could be conducted in Doomdooma and Sonari circles during the year under report for want of supernumerary Sub-Inspectors of Vaccination who could be entrusted with the work. I propose to initiate an enquiry in the Doomdooma circle during the current year.

6. The total number of deaths registered during 1914 amounted to 149,244, as compared with 167,379 during the previous year and 167,093, the average of the five years 1908-1912, the corresponding ratios being 24·66, 27·66 and 27·61, respectively.

7. The deaths registered in towns during the year numbered 2,726, as compared with 2,549 in 1913. These figures represent annual ratios of 22·19 and 21·20, respectively, the quinquennial average being 20·66. The highest rate was recorded in North Lakhimpur (42·55), most of which were returned as "fever." The next highest rates were recorded in Jorhat (31·71) due to cholera, Tezpur (31·37) due to cholera, and Nowgong also due to cholera (30·73). Excluding Nazira, for which statistics are available for three months only, the lowest rates were recorded in Karimganj (6·91), Sunamganj (9·74), Hailakandi (12·98) and Habiganj (13·61), but as noted in paragraph 4, the registration in subdivisional towns in the districts of Sylhet and Cachar is defective.

8. The deaths registered in rural areas during the year 1914 numbered 146,518, as compared with 164,830 in 1913. These figures represent the annual ratios of 24·71 and 27·79, respectively, the quinquennial average being 27·21. The highest rate (33·61) was recorded in the rural areas of Darrang, which appears to have been chiefly caused by cholera and "fever," and the lowest rate (19·54) was recorded in the rural areas in the district of Cachar.

Considered individually, the highest rates were recorded in Guma and in the three circles of Sidli in Goalpara. The Civil Surgeon was asked to make a special enquiry into registration in Sidli, Bijni and Guma circles through the Vaccination Inspecting Staff, but it appears that the enquiry was conducted in one circle only, *viz.*, Sidli. Kanairghat circle in Sylhet, Nalbari circle in Kamrup, Panery and Kalaigaon circles in Darrang, Bartola and Sibsagar circles in Sibsagar, and Bijni circle in Goalpara recorded death-rates between 40 and 45 per mille.

Rates below 26 were recorded in Rangia circle (18·91), Gauhati (17·85) and Polashbari (15·98) in Kamrup, Lakhimpur (18·67) in Cachar, Sylhet (18·13) and Derai (14·57) in Sylhet, Lunding (17·63) and Raha (17·02) in Nowgong, Sonari (17·02) in Sibsagar and Doomdooma (12·41) in Lakhimpur. The year under report was comparatively healthy and the low rates in all cases are not due to defective registration.

9. The special system of verifying vital statistics in urban areas referred to in the report of 1913 was continued during the year under report.

Registration in compulsory areas.  
Prosecutions under Act IV (B. C.)  
of 1873.

The subjoined table shows the defect in registration revealed in this way:—

Municipalities.	Unregistered vital occurrences detected during previous 12 months.		Recorded vital occurrences during previous 12 months.		Percentage of omissions.	
	Births.	Deaths.	Births.	Deaths.	Births.	Deaths.
1	2	3	4	5	6	7
Silchar ... ..	12	6	238	198	4·80	2·94
Hailakandi ... ..	5	1	19	14	20·83	6·66
Sylhet ... ..	97	57	331	361	22·66	13·63
Karimganj ... ..	20	43	3	2	86·95	95·55
Maulvi Bazar ... ..	3	1	51	36	5·55	2·70
Habiganj ... ..	...	...	88	127	...	...



Municipalities.	Unregistered vital occurrences detected during previous 12 months.		Recorded vital occurrences during previous 12 months.		Percentage of omissions.	
	Births.	Deaths.	Births.	Deaths.	Births.	Deaths.
1	2	3	4	5	6	7
Sunamganj ... ..	92	62	19	14	82.88	81.57
Dhubri ... ..	12	3	292	120	3.94	2.43
Goalpara ... ..	9	5	354	193	2.47	2.52
Gauhati ... ..	50	20	270	171	15.62	10.47
Barpeta ... ..	5	3	69	21	6.75	12.50
Tezpur ... ..	5	3	54	38	8.47	7.31
Mangaldai... ..	...	...	...	...	...	...
Nowgong ... ..	11	...	184	120	5.64	...
Sibsagar ... ..	25	14	207	90	10.81	13.46
Nazira ... ..	38	24	90	36	29.68	40.00
Jorhat ... ..	97	18	208	102	31.80	15.00
Golaghat ... ..	25	10	82	34	23.36	22.72
Dibrugarh... ..	...	...	280	182	...	...
North Lakhimpur ... ..	...	...	...	...	...	...
Total ... ..	506	270	2,839	1,859	15.12	12.68

Attention must again be directed to the unsatisfactory administration of the provisions of this Act in the towns of Habiganj, Karimganj, Maulvi Bazar, Sunamganj, Mangaldai and North Lakhimpur, to which reference was made in my report of the previous year. In Karimganj and Sunamganj the percentage of omissions found was very high, but in the former town only two persons were prosecuted, in the latter none. In Mangaldai and North Lakhimpur, no investigations were carried out, although a Sub-Inspector of Vaccination, who ought to have done this, has his headquarters at each of these towns. The attention of the local authorities of these areas has been directed to the matter, and it is hoped that improvement will result, while the Civil Surgeons concerned will be reminded of the duties of the Vaccination Inspecting Staff in regard to the administration of this Act in compulsory registration areas in their districts. Three hundred and thirty-three persons were prosecuted and 248 persons were convicted and fined. Fines of Rs. 162 were realised, the average amount of the fine being about annas 10. It may be noted that the penalty in English law for failure to register a death is £ 2. Under the Indian Act the maximum penalty is only Rs. 5 and this maximum is seldom or never inflicted. It would be much sounder to exact the full fine, Rs. 5, in all cases, rather than to inflict a series of small penalties which have no deterrent effect, and hence defeat the object of their infliction and are at the same time vexatious to the people and disappointing to the investigating staff. The number of convictions in Sylhet was very small, for out of 53 persons prosecuted, only 12 were fined. This seems to indicate either some degree of leniency on the part of the trying Magistrate, or that insufficient evidence was put forward to obtain a conviction.

10. As mentioned in paragraph 2 of the report, registration is only partially carried out in the districts of the Naga Hills, Garo Hills, Khasi and Jaintia Hills and Lushai Hills. It is not considered practicable to extend the area of registration in these hills until a higher standard of education is reached by the inhabitants.

Registration in hill districts.

Similarly, in communication with the Commissioner, Surma Valley and Hill Districts, it was considered whether some form of registration might be introduced in the North Cachar Hills, but it was found to be impracticable owing to the illiteracy of the people. The question of promoting primary education in these hills is now under consideration, and it has been advised that the subject may stand over until a certain number of people throughout the subdivision are trained to read and write.

The subjoined table shows the recorded birth and death-rates in the hill districts compared with those of the year 1913 :—

Districts.	1914.		1913.	
	Birth-rate.	Death-rate.	Birth-rate.	Death-rate.
1	2	3	4	5
Khasi and Jaintia Hills ... ..	25·18	18·34	29·26	18·40
Naga Hills ... ..	27·65	18·98	21·87	25·58
Lushai Hills ... ..	40·91	32·84	35·98	28·81
Garó Hills ... ..	30·78	23·37	30·98	25·93

Two hundred and sixty-four births and 150 deaths were reported from Shillong in 1914, against 288 births and 156 deaths in 1913. The Vaccination Inspecting Staff verified the entries of births and deaths in the thana registers in Shillong and discovered 7 omissions. Five persons were prosecuted and fined four annas each, a trivial penalty, which is unlikely to have much exemplary effect among the comparatively well-to-do Khasi population of the town. Two hundred and ninety-five births and 220 deaths were verified in the Garo Hills and 2 omissions were detected. Eight hundred and thirty-one births and 722 deaths were verified in the Lushai Hills and 1 omission was discovered. No extensive epidemic either of cholera, small-pox or "fever" was reported from any of these hills. Sporadic cases of cholera and small-pox were reported from the Garo Hills. The Civil Surgeon points out that the Lushais are very careful about their water-supply and that consequently water-borne diseases such as cholera very seldom occurred among them. It is interesting to note from the Civil Surgeons' reports that the hill people are gradually acquiring a knowledge and appreciation of the value of quinine as a cure for malaria.

11. The table below shows births and deaths reported from tea estates during  
Registration in tea gardens. the year 1914 :—

Districts.						Birth-rate.	Death-rate.
1						2	3
Cachar	...	...	...	...	...	21·24	15·50
Sylhet	...	...	...	...	...	21·39	16·58
Goalpara	...	...	...	...	...	37·16	30·08
Kamrup	...	...	...	...	...	8·74	6·50
Darrang	...	...	...	...	...	23·73	28·31
Nowgong	...	...	...	...	...	11·94	15·24
Sibsagar	...	...	...	...	...	27·15	25·22
Lakhimpur	...	...	...	...	...	29·51	26·51
Total						24·54	21·93



The birth and death-rates in tea estates in 1914 were 24.54 and 21.93, respectively, against 26.66 and 25.47, respectively, in 1913. The very low figures returned by Kamrup require investigation, as they suggest imperfect registration, and the Civil Surgeon will be asked to make an enquiry into this. The excess of deaths over births in Darrang and in Nowgong suggests that the health conditions of the labour force in these districts leave something to be desired.

12. The total number of births and deaths registered within railway limits during the year were 86 and 351, respectively, against 101 and 259, respectively, in 1913.

Registration on railways.

13. As usual, the highest birth-rates were recorded in the last three months of the year, *viz.*, October, November and December, and the lowest rates were recorded in the months of May, June and July.

Seasonal incidence of births and deaths.

The highest death-rates were registered in the months of June and October, November and December. This was chiefly due to an increased mortality from cholera in these months. The lowest rates were recorded in the months of March and April.

14. Imperial Statements Nos. II, IV and V appended to this report furnish details of registration of deaths according to sex, age and class. Compared with the year 1913, the mortality during 1914 was lower among both sexes, the rates being 25.15 in the case of males and 24.13 in the case of females, against 28.06 and 27.22, respectively.

Mortality according to age.

As in the previous years, the death-rate was highest among infants under one year and lowest among persons between 10 and 15 years of age.

During the year under report the mortality amongst Christians was 19.03, Hindus 24.82, Muhammadans 23.12, Buddhists 7.52 and other classes 29.31, against 18.99, 25.79, 29.84, 13.22, and 32.96, respectively, in 1913.

15. In rural areas 62,961 vital occurrences were verified and 2,153 or 3.42 per cent. of omissions were found, compared with 95,203 and 4.7, respectively, in 1913. Chaukidars and gaonburas who were found to be at fault were reported to the Deputy Commissioner for punishment. The percentage of omissions (11.17) was highest in the district of Sibsagar and next highest, 6.16, in the district of Kamrup. The percentage of omissions was lowest in the district of Lakhimpur (1.33). It is well to keep in mind, however, that the percentage of omissions discovered is often more an index of the activity of the investigating staff than of the relative district inaccuracy of registration. During the year under report less activity has been displayed by the Vaccination Inspecting Staff in this department of their work in the districts of Sylhet, Goalpara, Kamrup, Darrang and Sibsagar. A growing tendency to keep the Inspector of Vaccination at district headquarters to assist the Civil Surgeon's office in the preparation of returns, has been observed. This will be dealt with at greater length in the Vaccination Report and suitable action will be taken to put a stop to this practice.

Inspection of village registers.

16. No change has been made during the year in the agency for the registration of vital statistics either in rural areas or compulsory areas.

General accuracy of vital statistics and improvements effected during the year.

As in the previous years, vital statistics were collected in Sylhet, Cachar and in a portion of Goalpara by police chaukidars, and in Kamrup, Darrang, Nowgong, Sibsagar, Lakhimpur and in the remaining portion of Goalpara, by gaonburas. The former report to thana officers, and the latter to mauzadars, who in their turn submit their returns to the Civil Surgeons, in whose offices the district returns are compiled. Towards the close of the year orders were issued by Government to those municipalities in which Sanitary Inspectors have been posted, to appoint them as registrars of vital statistics for the town. Detailed instructions have been issued defining the duties they are to perform in connection with registration, and arrangements are being made for supplying them with the necessary forms.

The question of the apparent inaccuracy of the reporting of vital statistics from the Polashbari circle, which was the subject of comment in my report of 1913, has been carefully investigated during the year. Sub-Inspector of Vaccination Naresh Chandra Rai Chaudhuri was placed on special duty from May 1914 to the end of February 1915 for this purpose under the orders of the Civil Surgeon, and his work has been checked by the Deputy Sanitary Commissioner, who is prepared to accept responsibility for the general accuracy of his report. From the sub-joined table it



will be seen that out of 3,057 births, 44·4 per cent. had not been recorded and that out of 2,008 deaths, 41·3 per cent. had escaped registration. It is worthy of comment that as the result of his labours the figures recorded this year have risen from a birth-rate of 17·03 in 1913 to 24·18 in 1914 and a death-rate of 10·88 to 15·98 :—

Name of mauza.	Births.							Deaths.					
	No. of gaonburas' circles checked.	No. of births correctly recorded by gaonburas.	No. of births not recorded by gaonburas.	No. of births not copied by the mauzadars from gaonburas' registers.	Total No. of births <i>i.e.</i> , total of columns 3 and 4.	Total No. of omissions, <i>i.e.</i> , total of columns 4 and 5.	Percentage of omissions.	No. of deaths correctly recorded by gaonburas.	No. of deaths not recorded by gaonburas.	No. of deaths not copied by the mauzadars from gaonburas' registers.	Total No. of deaths, <i>i.e.</i> , total of columns 9 and 10.	Total No. of omissions, <i>i.e.</i> , total of columns 10 and 11.	Percentage of omissions.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Dakhin Sarabunsar ...	54	847	483	283	1,330	766	57·5	491	234	196	725	430	59·3
Ramsarani ...	26	711	274	44	985	318	32·2	583	181	41	764	222	29·0
Dakhin Rani ...	14	132	91	74	223	165	73·9	76	65	50	141	115	81·5
Chayani ...	23	399	120	...	519	120	23·1	314	64	...	378	64	16·9
Total for circle ...	117	2,089	968	401	3,057	1,369	44·4	1,464	544	287	2,008	831	41·3

While it need not be assumed that the same degree of defect holds good throughout the province, it throws grave doubts on the accuracy of the figures of any circle in the plains districts returning figures below the average provincial birth and death-rates, and it shows clearly the need for caution in interpreting the statistics with which we are dealing, when we have to take into consideration inaccuracies amounting to nearly one-half of the total.

It also shows the great need for reform in our methods, if the collection of vital statistics is to be more than a farce. The defects in the gaonbura system of collection are as follows. The gaonbura is, in his own estimation, primarily a revenue official, and he looks upon his duties as registrar of vital statistics as something extra which is added to the duties for which alone he receives a small remission of land revenue, and his tendency is to regard the collection of vital statistics as unpaid work. Consequently the gaonbura does not take the trouble to go round his village sufficiently often, and in many cases, owing to the fact that he is appointed for revenue purposes only, it happens that he is illiterate, and his books have to be filled in by the mauzadar, or a literate friend, from memories relating to a period of sometimes three or four months, as gaonburas frequently fail to appear before the mauzadar monthly as they are supposed to do. Mauzadars are also responsible for some of the omissions. If a gaonbura is late and appears after the monthly consolidated returns are submitted to the Civil Surgeon, his returns find no place in that month or in those of any subsequent month.

Frequently also, gaonburas are not supplied with books by the mauzadar and hence their records are not available even if they are literate. It happens also that when a gaonbura dies, or resigns, months may elapse before his post is filled up and hence no returns are received for that circle until the appointment is filled.

The remedy appears to be as follows :—

If Government wants accurate returns, we should be prepared to pay for them. The gaonbura gets a remission of land revenue equal to about Rs. 6 to Rs. 7 per year for his revenue duties. If a reward of annas 4 per month were granted conditional to his reporting regularly before a certain date, and provided that no omissions are discovered in his village by our inspecting staff, it would be worth his while to take some small amount of pains to fulfil these obligations. The cost, however, at Rs. 3 per gaonbura per year for every gaonbura in the Assam Valley districts would be considerable, and I have not attempted to estimate it. In my previous year's report, it was suggested that the grant of gold rings to gaonburas for good reporting might be made. The Commissioner, Assam Valley Districts, is of opinion that this is undesirable and suggests the system of cash rewards for accurate reporting. A less satisfactory alternative is for Government to insist that the collection of vital statistics is, equally with land revenue, a part of the duties of a gaonbura and to put pressure on them through the Revenue Department, *i.e.*, the Deputy Commissioner and the mauzadars.



Special steps will have to be taken to achieve this end, as, owing to vital statistics being considered a "side issue," district authorities are somewhat disinclined to put pressure on their revenue subordinates if their work in that sphere is considered satisfactory. Only literate gaonburas should be appointed, and slackness over their vital statistical returns should be more severely punished. Mauzadars should be ordered to submit late reports to the office of the Civil Surgeon in regard to months whose returns have been incomplete by the late arrival of gaonburas, and the returns should then be corrected in the office of the Civil Surgeon.

However, in view of the fact that popular opinion is what it is, it seems somewhat doubtful whether reliable statistics can be obtained under the present system unless Government is prepared to pay for them.

The substantial although incomplete improvement which has resulted in the area in question, *i.e.*, Polashbari, as the consequence of this investigation, suggests an auxiliary remedy, *viz.*, that of pursuing similar investigations in areas of obviously defective registration by means of a special staff. This may be done by increasing the cadre of our Sub-Inspectors of Vaccination and employing this reserve of supernumeraries upon similar investigations when their services are not required in connection with small-pox epidemics.

From this reserve the ordinary district vaccination staff would be recruited as vacancies occurred, and these men having had a thorough training in the investigation of defects in registration might be expected to maintain their interest in this department of their work as district officials.

It may be noted here that the same difficulties are not experienced in the chaukidari system of collection, as the control over the police chaukilar is more effective, and it appears to be a superior system as far as the collection of vital statistics is concerned, and it is a pity that it cannot be made applicable to the Assam Valley districts.

A special enquiry into vital statistics has been proposed by the Government of India and an area in the district of Sibsagar has been selected in which this enquiry will be carried out. The average conditions affecting registration appear to hold good in this area, and the enquiry will not therefore conflict in any way with the above proposals. The object of our endeavours will be to remedy defects in areas of bad registration, while the Government of India's enquiry will be to test in considerable detail the average conditions.

## SECTION VI.

### HISTORY OF CHIEF DISEASES.

17. The following statement compares the chief causes of mortality in 1914 with those of the previous ten years :—

Chief causes of mortality.

Diseases.	1904-1913.			1914.		
	Urban.	Rural.	Combined.	Urban.	Rural.	Combined.
1	2	3	4	5	6	7
Cholera ... ..	2.43	2.88	2.87	2.35	1.51	1.53
Small-pox ... ..	.74	.49	.49	.37	.42	.42
Plague ... ..	...	...	...	.008	...	.0001
Fever ... ..	9.91	13.60	13.53	9.56	13.83	13.75
Dysentery and Diarrhœa ... ..	3.01	2.41	2.42	2.91	2.22	2.23
Respiratory diseases ... ..	.57	.44	.44	.92	.66	.66
Injuries ... ..	.40	.30	.36	.48	.30	.30
All other causes ... ..	6.05	6.12	6.12	5.57	5.75	5.75
Total ... ..	23.14	26.26	26.24	22.19	24.71	24.66

The general death-rate of the province fell from 26.24 to 24.66. The death-rate from cholera in rural areas and in the province as a whole, compared with the decennial average, fell during the year.



The death-rate from plague in 1914, which is a new item, is insignificant and calls for little comment. Only one case of plague, which was bubonic in type, was imported from Ballia, and no propagation of the disease occurred.

### 18. *Cholera.*

Districts.	Death-rate per mille.	
	1904-1913.	1914.
1	2	3
Cachar ... ..	2·36	·27
Sylhet ... ..	2·83	·89
Goalpara ... ..	2·29	·54
Kamrup ... ..	4·72	1·15
Darrang ... ..	3·91	2·30
Nowgong ... ..	3·39	2·89
Sibsagar ... ..	2·42	5·08
Lakhimpur ... ..	1·23	1·20
Total ... ..	2·87	1·53

The death-rate from cholera during the year under report in the Surma Valley Division was the lowest for the last ten years. The district of Sibsaagar alone showed a higher incidence than the decennial average.

19. The towns which suffered from cholera in epidemic form during the year under report were Sibsaagar (9·88), Jorhat (3·88) and Dibrugarh (4·60). In Sibsaagar there were 69 cholera cases and 57 deaths. The people were advised not to drink the water of the Deklu stream, which was believed to be infected, and the local medical officers and the station overseer were instructed to see that disinfection was carried out. Attention had previously been drawn by this department to the unsatisfactory condition of the water-supply of the town, but for various reasons no action had been taken on the proposal to distribute through a pipe line the water of a fine old Ahom tank, which is the main feature of the town. It is hoped that it will be found possible to proceed with this scheme without any sacrilegious damage to the appearance or historical associations of this interesting sheet of water.

As is usual in such circumstances, the epidemic in Jorhat followed upon the appearance of cholera in epidemic form in the district, and appears to have been propagated by the contamination of two sluggish streams flowing through the town, from which people, in defiance of advice and past experience, will insist upon drawing their drinking water. Energetic action was taken by the executive authorities and medical staff. The newly appointed Sanitary Inspector was directed to supervise the sanitary measures undertaken, and all houses in which cholera cases occurred were visited and disinfected with the means at the disposal of the staff, and some infected houses of little value were burnt down. A notice was widely published explaining the means by which infection is spread, and advising the inhabitants against drinking any but water from unpolluted sources. An unfortunate feature of this epidemic, which is, however, common in similar cases throughout Assam, was the almost universal refusal of the people to accept any medical treatment. The town has now been equipped with a pipe water-supply and the conservancy system is being thoroughly reorganized, and it is probable that a cholera epidemic upon the same scale will not again visit the town.

There was also an epidemic of cholera in the town of Dibrugarh, which was energetically dealt with by the Civil Surgeon, Lieutenant-Colonel A. Leventon, I.M.S., and his staff. The Sanitary Inspector and a Sub-Assistant Surgeon on cholera duty attended to the cleansing of all insanitary places and some of the infected houses were burnt. The conservancy system of the town is in course of reorganization and schemes for the improvement of water-supply and drainage of the town have been prepared.



As regards rural areas, sporadic cases of cholera occurred in the districts of Kamrup, Darrang, Nowgong and Lakhimpur. The usual procedure of deputing a Sub-Assistant Surgeon to work in infected areas was followed in these cases. His instructions were to treat the cases as far as possible and to give advice to the villagers as regards the protection of their water-supply and the disposal of excreta. In Nowgong the fouling of the Kallang river appears to have been, as usual, the cause of the outbreak. In order that the villagers may refrain from using this stream as a source of drinking water, a scheme for providing 44 wells for the riparian population in convenient centres has been sanctioned during the year and work on some of these wells has already been started. A wide-spread epidemic of cholera was reported from the Sibsagar district. It is worthy of comment that the rainfall of the district during the year in question was the lowest on record since 1905, and this gave rise to a scarcity of drinking water and a concentration of pollution. All the three subdivisions of the district were affected. The epidemic first made its appearance in the month of June and continued throughout the year, the largest number of deaths, *viz.*, 894, being reported in the month of November. Extra Sub-Assistant Surgeons were immediately requisitioned and placed on cholera duty, and the Civil Surgeon, Assistant Surgeons in charge of subdivisions, and Sub-Assistant Surgeons in charge of dispensaries visited infected localities and rendered aid to the sick. The Officiating Civil Surgeon, Babu Kshiti Bhusan Sen, L.M.S., in his report on the epidemic, commented on the unwillingness of the people to accept medical aid or advice. The improvement of the water-supply in the rural areas of these districts, as well as in other plains districts of Assam, is under the consideration of the Local Administration. Comprehensive schemes for each of the districts covering a period of five years have been prepared during the year, and it is hoped that, when these schemes have been carried out, the severity of epidemics of cholera and other water-borne diseases may be much reduced.

20. The total number of deaths from cholera reported from tea estates during the year 1914 was 769 and the ratio per 1,000 of population of tea estates was 1.09, as compared with 1.324 and 1.88, respectively, of the previous year.

Cholera in tea gardens.

### 21. *Small-pox.*

Districts.						Death-rate per mille.	
						1904-1913.	1914.
1						2	3
Cachar	...	...	...	...	...	.01	...
Sylhet	...	...	...	...	...	.19	.14
Goalpara	...	...	...	...	...	.43	.78
Kamrup	...	...	...	...	...	1.64	2.03
Darrang	...	...	...	...	...	1.28	.36
Nowgong	...	...	...	...	...	1.30	.24
Sibsagar	...	...	...	...	...	.29	.18
Lakhimpur	...	...	...	...	...	.13	.09
Total						.49	.42

There was a slight increase in the death-rate from small-pox in the districts of Kamrup and Goalpara compared with the mean of the previous decennium, and a decrease in the remaining districts.

22. Out of 20 towns, 11 were free from the disease. The highest rate (2.04) was reported from Barpeta town, whose population being Mahapurushias is largely unprotected, as they are opposed to vaccination on religious grounds. Small-pox did not break out in epidemic form in any of the towns during the year under report.

As regards rural circles, cases were reported throughout the year from the Nalbari (6.06), Rangia (1.05) and Barpeta (1.46) circles in Kamrup and Ripu (9.34),



Sidli and Guma circles in the district of Goalpara. This points to the fact that sufficient protection is not being afforded by vaccination in these two districts and the matter will receive departmental attention. The mortality has been considerably reduced in the district of Nowgong, presumably owing to the increase in the number of vaccinations performed in this district.

### 23. Fever.

Districts.						Death-rate per mille.	
						1904-1913.	1914.
1						2	3
Cachar	...	...	..	...	...	10·82	10·05
Sylhet	...	...	...	...	...	10·61	10·30
Goalpara	...	...	...	...	...	25·94	26·46
Kamrup	...	...	...	...	...	14·87	16·67
Darrang	...	...	...	...	...	19·46	19·36
Nowgong	...	...	...	...	...	15·22	14·57
Sibsagar	...	...	...	...	...	11·45	13·37
Lakhimpur	...	...	...	...	...	11·04	10·68
Total						13·53	13·75

The death-rate from fever during the year under report follows the decennial average and there is no marked variation. During the year Major S. P. James, I.M.S., was deputed by the Government of India for malaria research work in Assam. The preliminaries of his work had scarcely received consideration when he was recalled to military duty, and the investigation has been postponed till his return.

At the request of the Chief Medical Officer, Assam-Bengal Railway, an enquiry was initiated into the causes which produce an excessive prevalence of malarial fever at the railway centre of Lumding, with the object of formulating a practical scheme for improving the health of the station. In co-operation with the railway authorities observations were initiated which will be continued during the coming year, and with the help of the Sanitary Engineer, the cost of the measures which these observations indicate will be calculated.

24. Among towns the highest rate, 39·51, was recorded in North Lakhimpur, followed by Barpeta (18·53) and Golaghat (16·99). The towns of Silchar and Hailakandi in Cachar, of Sunamganj, Maulvi Bazar, Habiganj and Karimganj in Sylhet, of Dhubri in Goalpara and of Nazira in Sibsagar recorded death-rates below 5 per mille from this cause.

As in the previous year, rural circles in Goalpara reported the highest rates and Panery, Kalaigaon, Mangaldai, Kariapara and Tezpur circles in Darrang Nalbari circle in Kamrup, Kanairghat circle in Sylhet, and Shamaguri circle in Nowgong; reported death-rates between 20 and 32.

### 25. Kala-azar.

Districts.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.
1	2	3	4	5	6	7	8	9	10	11
Cachar ...	3	...	22	5	6	2	3	2	8	...
Sylhet ...	955	743	576	561	454	866	549	394	444	203
Goalpara ...	86	90	49	32	81	87	125	192	206	138
Kamrup ...	499	438	516	386	378	450	354	385	294	215
Darrang ...	1,106	898	845	649	643	627	679	563	399	317
Nowgong	379	215	208	146	140	221	286	308	417	393
Sibsagar ...	...	6	11	2	1	...	34	31	29	24
Lakhimpur	2	17	...	5	...	50	11	...	1	8
Total	3,030	2,407	2,227	1,786	1,703	2,303	2,051	1,875	1,798	1,298



The figures show a decrease as compared with those of the previous year, and it is satisfactory that the upward tendency manifested in the mortality figures of the previous two or three years in Nowgong and Goalpara, with regard to which some misgivings were entertained, has been arrested.

Six travelling dispensaries were at work in the affected areas for varying periods during the latter part of the year, and although their work was in some cases interrupted or delayed owing to resignations or withdrawals among the staff owing to the exigencies of the war, these institutions are serving the purpose for which they were intended, *viz.*, that of obtaining information as to the behaviour of the disease, and of treating sick persons and bringing medical aid to remote villages.

The provision of pack-transport has proved successful in ensuring the mobility of the dispensaries independent of local conditions, but considerable difficulties have been experienced with the staff who appear to find living under canvas uncongenial, although all necessary provision for their comfort has been made.

During the year 342 visits were paid to *kala-azar* patients and 4,231 cases suffering from other diseases were treated, of which 1,137 cases were diagnosed as malaria, 640 as suffering from minor complaints of the digestive system and 405 were cases of skin disease.

Our operations aimed at the control of this disease in the Golaghat area, which were considered necessary on account of the proximity of this area to a previously uninfected population in an area of economic importance, were continued with satisfactory results. The Deputy Sanitary Commissioner in reporting on these operations, which are under his personal control, writes :—

“ To sum up, it appears legitimate to say that the disease has now practically ceased to exist except in the Dumjoria and Batiporia Lukumani area, where it is by no means of an acute type. The recurrence in two families removed to new sites is disappointing, but the reason is quite clear. To build a new house within 10 yards of the plinth of the old one is unsatisfactory when tea-garden experience has shown that it is necessary to move a much greater distance. Whether the site infection is conveyed through a crawling insect with a short range of locomotion, or whether it consists in the progressive fouling of neighbouring jungle providing a manner of transmission analogous to that of ankylostome infection, in either case removal to a site sufficiently far to prevent the migration of infected insects and substituting a different patch of jung'le as the cover to which the family resort for purposes of nature, must be necessary to be an efficient preventive of the disease.”

## 26. *Dysentery and Diarrhœa.*

Districts.						Death-rate per mille.	
						1904-13.	1914.
1						2	3
Cachar	...	...	...	...	...	2.51	1.63
Sylhet	...	...	...	...	...	1.98	1.97
Goalpara	...	...	...	...	...	.44	.40
Kamrup	...	...	...	...	...	1.32	.97
Darrang	...	...	...	...	...	4.22	3.36
Nowgong	...	...	...	...	...	2.11	1.80
Sibsagar	...	...	...	...	...	4.25	4.95
Lakhimpur	...	...	...	...	...	4.84	3.69
Total					...	2.42	2.23

The provincial death-rate during the year under report is almost the same as the decennial average. As usual, the rate was the highest in the three Upper Assam Valley districts—Sibsagar, Darrang and Lakhimpur.



The statement below shows the extent of the prevalence of dysentery and diarrhoea in tea gardens during the year :—

Darrang ...	...	...	...	...	...	8.56
Sibsagar ...	...	...	...	...	...	7.51
Goalpara ...	...	...	...	...	...	7.07
Lakhimpur	...	...	...	...	...	5.91
Sylhet ...	...	...	...	...	...	4.95
Nowgong	...	...	...	...	...	3.63
Cachar ...	...	...	...	...	...	2.75
Kamrup ...	...	...	...	...	...	1.12

During the year an enquiry into the causes which produce a high death-rate from diarrhoea and dysentery upon tea estates was carried out by Major McCombie Young, I.M.S., and a report was submitted to Government. Major Young was of opinion that the type of dysentery seen is for the most part a true dysentery, of which the chief predisposing cause is some debilitating chronic disease, such as ankylostomiasis. He found that, as a general rule, a considerable amount of attention is given to water-supplies and that most of these, although not perhaps ideal, are as good as they need be. He was of opinion that defects in the water-supply of tea estates have little or no bearing on the propagation of gastro-intestinal disease, but that the universal lack of any conservancy system results in the continued propagation both of the infection of gastro-intestinal diseases and of their main predisposing cause, ankylostomiasis, in spite of the great amount of care and thought which is given towards promoting the welfare of the labour force. Certain suggestions for bringing the Sanitary Department into more profitable contact with the tea industry by a revision of procedure in regard to returns, by offering advice in regard to the planning of water-supplies, and aid in the control of the sale of unwholesome food, are now under the consideration of the Local Administration.

27. A case of suspected plague occurred in the town of Goalpara in January, which ended fatally. The case was a female from the district of Ballia in the United Provinces, where plague was present in epidemic form. All precautionary measures were taken by the Sub-divisional Officer and Medical officers of the town and no further case was reported.

28. The death-rate from respiratory diseases, injuries and all other causes (such as ankylostomiasis, anæmia, measles and chicken pox) were .66, .30 and 5.75, respectively, as compared with .71, .30 and 6.41, respectively, in the previous year.

*Ankylostomiasis*.—The following extracts from a report furnished to Government in this connection may be of interest:—

“The problem of the extent of the prevalence of ankylostomiasis in Assam as an infection or as a disease varies considerably in respect to the class of the population which is under review.

“In the indigenous population, while the number of persons who are believed to harbour the worms is estimated to be in some places about 60 per cent., the number who appear to show symptoms of disease as the result of this infection, as evidenced by marked anæmia and dropsical symptoms, appears to be small. In the course of the recent systematic survey of the whole province to determine the extent of the prevalence of *kala-azar*, no such cases came to the notice of the Deputy Sanitary Commissioner, although such cases might easily have been returned by the investigating staff as persons suspected of suffering from *kala-azar*, and might thus have come to his notice in the course of tours to verify reports of *kala-azar* infection.

“The Civil Surgeon of Dhubri refers to an extensive investigation into the prevalence of ankylostomiasis in imported labour and in the indigenous population, which was carried out by Lieutenant-Colonel Dobson, I.M.S., in the early nineties, the records of which are available in his office. Dobson showed that 80 per cent. of coolies imported from all parts of India harboured ankylostomes and that in healthy coolies the percentage of infection was 77 per cent. In healthy natives of Assam, he found 67 per cent. who were harbouring ankylostomes. The Civil Surgeon further remarks that no such extensive observations have been carried out in this district (Goalpara) since Dobson's time, but from occasional examination of stools of in-patients in the dispensaries, suffering from various other diseases, the percentage of infection would seem to be as Dobson found it 20 years ago.

“The consensus of the medical opinion of the province is to the effect that, while ankylostomiasis as an infection is wide spread in the indigenous population, as a separate disease entity it is comparatively rare, and a scrutiny of the district dispensary returns appears to confirm this opinion.

“No measures for the prevention of ankylostomiasis have therefore been attempted in the indigenous population. It cannot, however, be doubted that any practical measures tending towards the reduction in the degree to which the population is infected would be desirable in that they must tend to an appreciation in the general health of the community leading to an increased resistance to other diseases.



" Among the immigrant population, which forms the bulk of the labour force of the tea industry of the province, different conditions prevail. The degree of infection of the population as a whole, and of the individuals in person, seems greater, and the prevalence of ankylostomiasis is a fertile source of economic inefficiency and an important predisposing cause of mortality (from dysentery and diarrhoea) among the labour force in places where measures aimed at its extinction have been imperfectly carried out, or only recently introduced.

" The reasons for this greater intensity appear to be the aggregation of infected persons in communities which make no attempt at any system of disposal of night-soil, which is deposited indiscriminately within a radius of 100 yards of the lines in jungle, or among tea bushes. The abundant moisture and high temperature of the Assam hot weather provides ideal breeding conditions for the parasite, and the whole of the soil surrounding the lines becomes heavily charged with possibilities of infection. These possibilities become probabilities every time the bare-footed worker enters or passes through this highly infected area. Consequently a measure of prophylaxis, which is extensively practised, aiming at anointing the feet and legs of the worker with an ointment of lysol or creoline before and after working hours, has but a partial although valuable application.

" A Medical officer of the tea industry in the district of Nowgong gives an account of the current method of prophylaxis by vermifuge treatment, which, with minor modifications, is now universally practised throughout the tea industry. He states that by regular musters and the careful administration of Thymol (in these days 'Beta-Naphthol') you hardly ever see the dropsical case, the disease being taken in time."

Experience has shown that on tea estates where this routine has been carefully and thoroughly carried out for a period of years, the mortality and inefficiency from ankylostomiasis has undoubtedly been very greatly reduced. The desirability of introducing some simple but efficient form of conservancy system to reduce inefficiency from ankylostomiasis, dysentery and diarrhoea and cholera has been emphasised time and again.

When the economic importance of this necessary innovation has been sufficiently realised, it is probable that the energy and determination which has characterised the growth of the tea industry will be able to overcome the undoubted difficulties which prejudice and ignorance now place in the way.

With regard to the species of parasite found and as to whether *N. Americanus*, *A. Duodenale* or *A. Ceylanicum* is the commoner variety, it is worthy of note that a certain number of worms were furnished for examination to Major Clayton Lane by a Medical officer of the tea industry in Sibsagar, and of these 384 proved to be *Necator Americanus* and 3 were *Agchylos toma Duodenale*. It is not, however, known whether the same proportions hold good elsewhere.

## SECTION VII.

### VACCINATION.

[*Published separately.*]

## SECTION VIII.

### SANITARY WORKS—MILITARY.

[*No remarks.*]

## SECTION IX.

### SANITARY WORKS—CIVIL.

29. The number of Municipalities, Unions and Stations in the province remained the same as in the previous year, *viz.*, 14 Municipalities, 4 Unions and 1 Station.

General.

30. The income of the above Municipalities and Unions and the Stations amounted to Rs. 8,56,613 during the year under report, as compared with Rs. 6,66,390 in the previous year. The increase of Rs. 1,90,223 is not due to increased rates of taxation, but to large grants-in-aid received from Government to finance the construction of water-works and other schemes. The expenditure on sanitation amounted to Rs. 3,70,076, as compared with Rs. 3,04,769 of the previous year, showing an increase of Rs. 65,307. The percentage of the expenditure incurred on sanitation proper, excluding that upon roads, was 28.58 during the year, as compared with 35.7 of the previous year. The Municipality of Karimganj spent 79.68 per cent. of its income on sanitation, three Municipalities spent between 50 and 60 per cent., one 40 per cent., six between 30 and 40 per cent., two between 20 and 30 per cent. and six below 20 per cent. of their income on this purpose. The heading "Conservancy," including "road-watering and cleansing," in form 3 of the statement in the annual reports on the working of municipalities in Assam does not sufficiently clearly show the amount which is expended on conservancy



purposes proper. It would assist in considering the relative distribution of expenditure on these different heads, if a separate column were introduced for conservancy charges alone, and if road-cleansing and watering charges were separately shown or included in column 9, where it more properly belongs. The heading "Treatment of the sick" in the Municipal budget represents the amount of the contribution made to the charitable dispensary, and it is not, strictly speaking, a sanitary charge and should not be shown under the sanitary heads of the Municipal budget.

In surveying the problems of municipal sanitation it becomes increasingly clear that our activities in this direction depend largely upon the financial resources of the towns. While these are undeniably small, there is no doubt that, by raising the scale of taxation in many cases, more money might be raised for these purposes than is at present available.

It is satisfactory to find that in many cases this is being realised and that the rate of taxation is being raised to meet the demands upon income which new water-supplies and better conservancy impose, but the bed-rock fact that no sanitary improvements can be carried out without paying for them cannot be too often or too emphatically reiterated.

During the year under review, considerable advance has been made towards providing larger towns with pipe water-supplies, and the conservancy arrangements, which were hitherto very primitive and inefficient, have, as the result of careful review of their defects, and with the aid of help from Government, been re-modelled and expanded.

Much, however, remains to be done in this department of work, the importance of which has been clearly demonstrated by modern research. The condition of private latrines has received attention during the year and the Municipality of Jorhat has been particularly successful in introducing a reasonably sanitary pattern of private latrine, costing about Rs. 16, a price which is within the means of all but the poorest householders. Although to the scientific sanitarian these matters may seem but the A. B. C. of sanitary effort and the need for them so obvious as to be self-evident, yet in their introduction much inertia and opposition has to be overcome. That this inertia is being overcome in such matters, trivial as they may appear, is an earnest of real advance, containing a promise of progression from small matters to greater improvements in the future.

The subjoined table shows the municipal expenditure on sanitary purposes during the year 1914, as compared with that of 1913 :—

Heads of expenditure.	Total expenditure.		Difference.	
	1914.	1913.	Increase.	Decrease.
1	2	3	4	5
	Rs.	Rs.	Rs.	Rs.
1. Conservancy, including establishment road-watering, latrines, etc.	1,37,441	1,18,983	18,458	.....
2. Drainage ... ..	15,962	13,137	2,825	.....
3. Water-supply ... ..	63,324	73,152	.....	9,828
4. Disposal of the dead ... ..	317	119	198	.....
5. Markets and slaughter-houses ... ..	5,732	12,208	.....	6,476
6. Treatment of the sick ... ..	15,647	16,103	.....	456
7. Vaccination ... ..	1,336	1,106	230	.....
8. Other sanitary works ... ..	5,126	3,494	1,632	.....
Total ...	2,44,885	2,38,302	23,343	16,760
9. Construction and maintenance of roads...	1,25,191	66,467	58,724	.....
Total, including roads ...	3,70,076	3,04,769	82,067	16,760



31. The total Imperial sanitary grants, non-recurring and recurring, amounted to Rs. 7,96,000 from 1911-12 to 1914-15 and grants made from these heads amounted to Rs. 7,23,000.

The following statement shows the distribution of the Imperial grant for sanitation during the financial year 1914-15 :—

	Rs.
<i>Water-supply—</i>	
1. Grant made to Sylhet Municipality for the improvement of its water-supply.	1,10,000
2. Grant made to Tezpur Municipality for the improvement of its water-supply.	66,666
3. Transferred to the Public Works Department budget for the improvement of water-supply at Cherrapunji in the Khasi and Jaintia Hills district.	11,562
4. Grant made to Nazira Union for the improvement of its water-supply.	4,100
5. Additional grant made to the Golaghat Union for the improvement of its water-supply.	5,377
6. Additional grant made to the Dhubri Municipality for the improvement of its water-supply.	1,916
7. Additional grant made to the Silchar Municipality for the improvement of its water-supply.	26,110
8. For the improvement of water-supply in Jowai in the district of Khasi and Jaintia Hills.	1,266
9. Grant made to the Political Officer, Sadiya, for the improvement of water-supply of Sadiya.	400
<i>Drainage—</i>	
10. Grant made to the Golaghat Union for the improvement of its surface drainage.	879
11. Transferred to the Public Works Department budget for the construction of a regulating sluice in connection with the drainage scheme of the town of Nowgong.	3,500
12. Grant made to the Shillong Municipality for the construction of a pucca drain near the "hotel."	1,500
<i>Conservancy—</i>	
13. Grant made to the Sylhet Municipality for the re-organization of its conservancy system.	16,200
14. Grant made to the Dibrugarh Municipality for the re-organization of its conservancy system.	3,771
15. Grant made to the Subdivisional Officer, North Cachar Hills, for the construction of a public latrine at Haflong.	500
16. Grant made to the Political Officer, Manipur, for the improvement of the conservancy arrangements in the British reserve at Imphal.	2,000
<i>Miscellaneous—</i>	
17. Grant made to the Political Officer, Manipur, for miscellaneous sanitary improvements in the British reserve at Imphal.	3,000
18. Grant made to the Shillong Municipality and Cantonment for the eradication of lantana.	700
19. Grants made for the sanitary improvements of Doomdooma and Tinsukia bazars in the district of Lakhimpur.	3,300
20. Grant made to the Political Officer, North-East Frontier, for the sanitary improvement of the Sadiya bazar.	400
21. Additional grant made to the Shillong Municipality for the improvement of dhobighat.	510
22. Grant made to the Golaghat Union for filling up shallow and polluted tanks in the town.	600
23. Transferred to the Public Works Department budget for temporary cholera hospital at Gauhati.	1,754
24. For Sanitary staff at Dimapur ... ..	480
25. Expenditure incurred on account of the pay and allowance of the Malaria Research Officer for a short period only.	2,710
26. Pay and allowance of the ten Sanitary Inspectors ... ..	8,550
Total ... ..	<u>2,77,751</u>



## SURMA VALLEY DIVISION.

*Cachar.*—The contract for the construction of the Silchar water-works has been given to Messrs. James Simpson & Co., Calcutta, and the firm is arranging to start work immediately. An additional grant of Rs. 26,110 has been made to the municipality during the year to meet the excess of detailed estimates over the rough estimates and to reduce the loan by Rs. 10,000. The detailed estimates for the water-works now amount to Rs. 1,32,768.

*Sylhet.*—The detailed plans and estimates for a pipe water-supply scheme for the town of Sylhet have been prepared. The estimate amounts to Rs. 2,00,882. Proposals for financing the scheme have been accepted by the municipality and the contract is being given to Messrs. James Simpson & Co.

The conservancy arrangements of the town are being thoroughly re-organised with Government aid. Energetic action is being taken by the Municipal Commissioners to carry out necessary improvements by the construction of additional public latrines and by increasing the existing plant. The sweeper staff is being increased and better houses are being provided for them.

The detailed plans and estimates for the Karimganj town improvement scheme have been prepared. The estimates amount to Rs. 70,263 and provide for (1) new roads, (2) improvement of water-supply, (3) conservancy and (4) Municipal market. The question of financing the scheme is at present under the consideration of the Municipal Commissioners and the Divisional Commissioner.

## ASSAM VALLEY DIVISION.

*Goalpara.*—The detailed plans and estimates for a pipe water-supply project for the town of Dhubri, amounting to Rs. 58,065, have been prepared. An additional grant of Rs. 1,916 has been made to the municipality during the year. The proposals for financing the scheme have been concluded and the work has been taken in hand by the Public Works Department.

The drainage scheme of the town of Goalpara has been postponed pending the consideration of improvements in its water-supply and conservancy which seem more pressing. The Sanitary Board has called for a scheme to remedy these defects.

*Kamrup.*—Two sets of plans and estimates—(1) for the general drainage scheme of the town of Gauhati and (2) for the provision of pucca drains in certain quarters of the town—have been prepared. The estimates for the former amount to Rs. 7,500 and for the latter to Rs. 23,513. The financial aspect of both these schemes is now under the consideration of the Municipal Commissioners.

The water-works of the town have been maintained in satisfactory order, and to prevent undue wastage all private connections have been provided with meters, with excellent results on the quantity of water available. Arrangements have been completed for the periodical bacteriological analysis of its water in the Provincial Laboratory.

*Darrang.*—Detailed plans and estimates of a piped water-supply project for the town of Tezpur have been prepared and the financial arrangements have been settled. The estimates amount to Rs. 99,998. It is expected that work on it will commence shortly.

A great improvement has been effected by the drainage of the low-lying areas of the town. A very small portion of this work remains to be done, which will be completed during the current year.

The water-supply scheme for the town of Mangaldai has been postponed till the institution of some form of Local Self-Government, which permits of funds being raised to meet the maintenance charges.

A drainage project amounting to Rs. 9,097 has been prepared and is under the consideration of the local authority.

*Nowgong.*—A scheme to drain the town of Nowgong is under investigation by the Public Works Department. By the construction of additional wells during the year in different quarters of the town with Government aid, the want of good drinking water has been largely reduced. During the year one pucca well was completed and two tube wells have been sunk. In accordance with the suggestions of the Deputy Sanitary Commissioner, a pump and cistern have been provided for the bazar well and steps have been taken to provide coverings for all public wells.



*Sibsagar.*—The water-works in the town of Jorhat have been practically completed, but will not be available for use until the rains have filled the tank from which the supply will be derived. A sluice gate and weir to provide for a continuous flow of water in a stream passing by the town during the dry months have been constructed. Previously the bed of the stream was a nuisance during the dry months.

Earth-work on the drinking water tanks in the town of Golaghat has practically been completed and work will shortly be started on the construction of the water lift and fencing.

The work on the surface drains of the town has been completed. The construction of concrete blocks for the maintenance of a uniform gradient is still in progress. Steps are being taken to fill up certain insanitary tanks in the town. A scheme for the water-supply of the town of Sibsaagar is under consideration by the Sanitary Board.

A project for improving the water-supply of the town of Nazira by construction of two protected tanks has received the sanction of the Local Administration. The estimates amount to Rs. 8,200.

*Lakhimpur.*—Estimates for a pipe water-supply and an improved surface drainage system for the town of Dibrugarh, amounting to Rs. 1,66,000 and Rs. 76,606, respectively, have been prepared during the year. The report of the municipality on the financial aspects of both these schemes has been approved by the Sanitary Board and the scheme is now under consideration by Government.

#### HILL DISTRICTS.

*Khasi and Jaintia Hills.*—A small pipe water-supply scheme for the villages of Saitsohpen and Cherrapunji has been satisfactorily completed and is an excellent example of what can be done under favourable conditions at a comparatively low cost.

A drinking water tank is under construction in Jowai. The dhobighat in Shillong has been completed and is being handed over to the municipality.

The question of a sewerage scheme for Shillong has not progressed any further owing to the lack of funds. The rapid growth of the place makes it difficult for the municipality to expand the conservancy system sufficiently to keep pace with its needs, and the difficulty of obtaining the necessary staff and the cost of retaining them will, in time, render it advisable to consider the substitution of a modern water-carriage system of removal for that of the expensive and unsatisfactory system of conservancy.

*Manipur.*—A grant of Rs. 4,000 was made for the improvement of the surface drainage in the British Reserve at Imphal in the Manipur State. Two further sums of Rs. 3,000 and Rs. 2,000 were also sanctioned for the improvement of the conservancy system and for other sanitary needs of this area and more money will be required to complete the necessary measures of drainage and conservancy.

*North Cachar Hills.*—The cast iron pipes of the Haflong water-works have been replaced by galvanized iron pipes and a wash tank for the filters has been provided.

An expenditure of Rs. 1,08,563 is reported to have been incurred by the Public Works Department on sanitary works during the year under report in the province, against Rs. 1,73,169 of the previous year.

#### SECTION X.

##### GENERAL REMARKS.

#### 32. Comprehensive schemes for the improvement of rural water-supply by means

Village sanitation.

of protected tanks and wells with due regard to the needs of the different subdivisions have been evolved by each of

the nineteen Local Boards in the province. The estimates include provision for their protection and for water-drawing mechanism according to the type plans of the Sanitary Board. It appears that in some districts these instructions have not been rigidly followed, as the need for doing so has been imperfectly understood, with the result that the protection against pollution is incomplete. The attention of Chairmen of Local Boards should be directed to the importance of complying strictly with the directions laid down by the Sanitary Board in this connection, as compliance therewith was an essential condition of the Government grant. The cost has been spread over a period of five years commencing with the year 1915-16 and the sequence of the work has been arranged in relation to relative urgency. With the Government grant of Rs. 10,000 made to each Local Board in 1913-14, Local Boards have endeavoured to improve as many as possible of their existing tanks and wells. During the year a Government grant of Rs. 20,000 has been made to the Nowgong Local Board for the improvement



of the water-supply in certain areas in the Nowgong district where it is particularly bad. The scheme provides for the construction of 44 wells. Thirty of these wells are now under construction and some of them have already been completed. The total estimate amounts to Rs. 40,458.

Proposals for introducing a system of village *Panchayats* in the Assam Valley are under consideration. When these are constituted, their duties in regard to sanitation will be defined. A scheme for providing a service of District Sanitary Inspectors was drawn up, but its further consideration has been postponed for the present.

*Local Board expenditure on sanitation.*—The nineteen Local Boards in the province incurred an aggregate expenditure of Rs. 2,24,388, as compared with Rs. 89,397 on rural water-supply and other minor schemes of village sanitation. This large increase is due to the increased activity displayed by Local Boards in the improvements of their water-supply as the result of the Government grant of Rs. 10,000 made to each Local Board in 1913-14. The constructions under this scheme are to be carried out in accordance with type plans drawn up by the Sanitary Board which provide for better protection against pollution.

33. The table below shows the sale of quinine effected during the year under

Sale of quinine.

report, as compared with that of the previous year:—

Districts.	‘Treatment’ parcels sold.		Difference.	
	1914.	1913.	Increase.	Decrease.
1	2	3	4	5
	Rs.	Rs.	Rs.	Rs.
Cachar ... ..	825	495	330	...
Sylhet ... ..	2,079	1,636	443	...
Khasi and Jaintia Hills ... ..	1,318	903	415	...
Naga Hills ... ..	101	150	...	49
Lushai Hills ... ..	250	151	99	...
Goalpara ... ..	1,103	1,099	4	...
Kamrup ... ..	794	687	107	...
Darrang ... ..	714	682	32	...
Nowgong ... ..	950	1,224	...	274
Sibsagar ... ..	907	403	444	...
Lakhimpur ... ..	222	704	...	482
Total ... ..	9,263	8,194	1,874	805

The popularity of the sale of quinine in the treatment system has been maintained and the value of the drug as the only remedy for malaria is being increasingly realised by the people. Every possible measure for popularising quinine by means of advertisement has been undertaken. During the current year enamelled iron posters consisting of a picture of indigenous design and conception, specially designed to attract the attention of the villagers to the merits of the drug, have been issued for exhibition in all post offices, important railway stations and steamerghats and other public places. Other schemes of advertisements are also under consideration. An experiment in the sale of quinine in remote districts by means of a special quinine vendor failed, as the right stamp of man could not be obtained for the post. Details of a scheme for selling quinine through village schoolmasters are being worked out in consultation with the Education Department and Local Boards. The Superintendent, Lushai Hills, has suggested the supply of quinine to village writers in his district for sale and the matter is under reference.



Of 92,630 treatments sold during the year, 48,748 treatments were sold through the agency of the post offices alone, as compared with 38,628 of the previous year. The increase is attributed to "greater appreciation of the efficacy of the medicine." There was no delay in complying with the requisition of the postmasters, nor has any case of defalcation or loss in transmission been reported.

34. There is no important centre of pilgrim traffic in this province. As in the previous year, the usual sanitary arrangements were made in connection with the Siddheswari mela in Katigora in Cachar.

Pilgrim traffic.

35. Under the Assam-Bengal Railway there were four coolie camps, the population of which varied from 200 to 600. The general health condition was reported to be good and no outbreak of epidemics was reported. The conservancy and water-supply arrangements were satisfactory.

Railway coolie camps.

36. *Bacteriological*.—Blood smears.—There were 182 blood films examined this year, against 124 in 1913, of which the bulk were received from outside stations.

Provincial Laboratory.

As the result of an outbreak of disease in a local school three samples of milk were analysed bacteriologically to ascertain if they contained any organisms pathogenic to man, but without result.

*Bacteriological examination of water*.—Sixty-six specimens were examined against 34 of the previous year.

*Chemical and bacteriological analysis of sewage*.—Sixty samples were examined this year.

*Examination of stools*.—For the presence of intestinal parasite or their ova 44 were examined.

*Food-stuff*.—Eighteen specimens were examined.

*Silt*.—Eighty-three specimens of silt were examined at the request of the Public Works Department.

*The Shillong tap water*.—Was analysed both chemically and bacteriologically every week. It has maintained a uniformly high standard of purity throughout the year.

*Miscellaneous*.—The hospitality of the laboratory was extended to Major Mackie I.M.S., *Kala-azar* Research Officer, to Mr. Hutchinson, Imperial Agricultural Bacteriologist, and to Mr. Kingdon, Assistant Commissioner of Excise, on different occasions during the year.

On the whole, there has been a steady increase in the work of the laboratory since it was established in 1912, although its usefulness is not as much utilised as might be expected.

37. The number of emigrants that passed through Goalundo to the labour districts of Assam during the year was 50,018.

Emigration.

They were despatched by the following routes:—

To the Assam Valley by steamer ...	...	...	...	18,543
Ditto by rail <i>via</i> Chandpur ...	...	...	...	20,983
To Cachar and Sylhet by rail <i>via</i> Chandpur ...	...	...	...	10,452

The health of the emigrants during the year was satisfactory. Fourteen cases of infectious diseases were admitted into the hospital at Goalundo, *viz.*, 7 from cholera and 7 from small-pox, and there were three deaths from cholera. On steamers, there were 13 deaths, *viz.*, 8 from cholera and 5 from other causes. The sanitary arrangements on steamers and railways were regularly inspected by the Travelling Inspector of Emigrants and immediate action was taken to remedy defects in consultation with the Steamer Companies and railway authorities. The Travelling Inspector also inspected all Government coolie depôts on the river and the sanitary and medical arrangements of these depôts were satisfactory. The total number of cases treated in the depôts numbered 148 (67 from cholera, 11 from small-pox, 13 fever from 9 dysentery and diarrhoea and 48 from other causes); 41 deaths occurred—37 from cholera, 1 from small-pox and 3 from other diseases.



During the year an "all rail" route *via* Amingaon has been included in the approved routes for indentured labour traffic, and the supervision of the sanitary arrangements on this route from Sara to Amingaon has been entrusted to the Sanitary Department of this province with the consent of the Bengal Government. Similar arrangements to those made by the Assam-Bengal Railway for the feeding and general comfort of labourers *en-route* to tea estates in Assam are being worked out by the Eastern Bengal State Railway in consultation with this department.

The post of the Travelling Inspector of Emigrants, which is held by a Military Assistant Surgeon, was filled by Mr. Munrowd from 1st January 1914 to 26th March 1914 and Mr. Blinkworth from 27th March 1914 to the end of the year.

38. Proposals for the creation of a separate Sanitary Commissionership were submitted to the Local Administration, by whom they were approved and submitted to the Government of India. The sanction of the Secretary of State to the creation of the appointment is now awaited.

*Sanitary Commissioner.*—I visited Dhubri, Jorhat, Dibrugarh and Silchar towns and the emigration coolie depôts and hospitals at Dhubri, Gauhati, Tezpur, Tinsukia and Dibrugarh.

*Deputy Sanitary Commissioner.*—In the month of January, Dibrugarh was visited for the purpose of making an analysis of the water of the borings for the proposed water-supply scheme, the emigration arrangements in the Brahmaputra were inspected, and the Sanitary Conference at Lucknow was attended as a provincial delegate. On his return from Lucknow in February Major Young inspected the *kala-azar* operations in Golaghat, the Municipality of Jorhat, and the vaccination work in the Sibsagar district.

In this month an enquiry into the prevalence of dysentery on tea estates was commenced and continued during March, when numerous gardens in the Sibsagar and Lakhimpur districts were visited.

The Municipality of Dibrugarh and the vaccination in both these districts also received attention. The month of April was spent in the preparation of the Sanitary Report and in a detailed inspection of the Municipality of Shillong.

In May and June some laboratory research work on the Shillong water-supply was completed, and the supplement to the Sanitary Report was prepared for the press. Major Young proceeded on three months' privilege leave on June 22nd, making over charge of the duties of the appointment to Captain J. F. James, I.M.S., who visited Lumding and Manipur during his tenure of the appointment. On recall from privilege leave the duties of the post were re-assumed by Major Young on September 17th.

Touring was re-commenced in November, when the Municipality of Gauhati was inspected, the equipment of the *kala-azar* dispensaries was partially completed, and their working inspected. The Municipality of Barpeta was visited and an enquiry into the accuracy of the collection of vital statistics in the Kamrup district received attention. The district vaccination was also tested.

In December, the Municipalities of Dhubri and Goalpara were visited, and a travelling dispensary in Mangaldai was inspected. During the year the routine work of the Sanitary Commissioner's office, together with that of the Secretaryship of the Sanitary Board, was carried on by the Deputy Sanitary Commissioner.

Major Young's intimate knowledge of the province and of local conditions has been of great value to me and to the Department. He has worked with his usual zeal and energy, and I have much pleasure in bringing his services to the notice of the Administration.

Shillong,  
The 7th May 1915.

H. E. BANATVALA, Colonel, I.M.S.,  
Sanitary Commissioner, Assam.



## SECTION XI.

## ANNUAL REPORT OF THE SANITARY BOARD.

39. The constitution of the Board remained the same as in the previous year, *viz.*—

The Inspector-General of Civil Hospitals	...	...	<i>President.</i>
Chief Engineer	}	...	<i>Members.</i>
Divisional Commissioners			
The Deputy Sanitary Commissioner	...	...	<i>Secretary.</i>

Only one meeting of the Board was held during the year and the business of the Board was for the most part transacted by the circulation of papers.

The following are the most important schemes which were considered by the Board and submitted to Government with recommendations :—

Silchar water-works scheme.

Sylhet water-works scheme.

Tezpur water-works scheme.

Dhubri water-works scheme.

Five years' programme of rural water-supply.

Water-supply scheme of Kallang river area in Nowgong.

Cherrapunji water-works.

Nazira water-supply.

Jowai water-supply.

Golaghat drainage scheme.

The following schemes were under consideration at the end of the year :—

Dibrugarh water-supply, Sibsagar water-supply, Dibrugarh drainage, Gauhati drainage, Mangaldai drainage, Karimganj town improvement scheme, Anti-malaria scheme for Lumding, and drainage scheme of Goalpara.

All the schemes mentioned in paragraph 31 of this report were considered by the Sanitary Board before transmission to Government.

Mr. Duguid, the Special Public Works Department Officer, under the Chief Engineer, filled the place of a Sanitary Engineer in the preparation of plans and estimates of sanitary schemes.

During the year the function of the Board remained a purely advisory one. No funds were at its disposal for distribution in its capacity as a Board and no independent action was initiated by it. Its activities are therefore sufficiently described in the departmental report.

*Shillong,*

*The 7th May 1915.*

T. C. McCOMBIE YOUNG, *Major, I.M.S.,*

*Secretary, Sanitary Board, and Deputy Sanitary Commissioner, Assam.*





## STATEMENTS.

IMPERIAL STATEMENT No. I.—*Statement showing the births*

Number.	District.	Population according to the Census of 1911.			Number of births registered.		
		Male.	Female.	Total.	Male.	Female.	Total.
1	2	3	4	5	6	7	8
	SURMA VALLEY.						
1	Cachar ... ..	246,205	223,962	470,167	7,618	7,345	14,963
2	Sylhet ... ..	1,268,469	1,204,202	2,472,671	41,875	38,103	79,978
	Total ... ..	1,514,674	1,428,164	2,942,838	49,493	45,448	94,941
	ASSAM VALLEY.						
3	Goalpara ... ..	318,475	282,168	600,643	12,414	11,552	23,966
4	Kamrup ... ..	339,398	328,430	667,828	11,366	10,537	21,903
5	Darrang ... ..	198,581	178,733	377,314	6,789	6,597	13,386
6	Nowgong ... ..	154,938	148,658	303,596	4,579	4,326	8,905
7	Sibsagar ... ..	364,810	325,489	690,299	11,751	11,144	22,895
8	Lakhimpur ... ..	249,021	219,968	468,989	6,929	6,418	13,347
	Total ... ..	1,625,223	1,483,446	3,108,669	53,828	50,574	104,402
	Total for the Province ...	3,139,897	2,911,610	6,051,507	103,321	96,022	199,343

IMPERIAL STATEMENT No. II.—*Statement showing the births and deaths*

Number.	District.	Area, in square miles.	Average population per square mile.	Population (Census of 1911).			Births.		Number of deaths registered.		
				Male.	Female.	Total.	Total number.	Births per 1,000 of population.	Male.	Female.	Total.
1	2	3	4	5	6	7	8	9	10	11	12
	SURMA VALLEY.										
1	Cachar ... ..	1,859	253	246,205	223,962	470,167	14,963	31·82	4,735	4,422	9,157
2	Sylhet ... ..	5,388	458	1,268,469	1,204,202	2,472,671	79,978	32·34	23,966	25,625	54,611
	Total ... ..	7,247	406	1,514,674	1,428,164	2,942,838	94,941	32·26	33,721	30,047	63,768
	ASSAM VALLEY.										
3	Goalpara ... ..	3,954	151	318,475	282,168	600,643	23,966	39·90	9,887	8,033	17,970
4	Kamrup ... ..	3,858	173	339,398	328,430	667,828	21,903	32·79	8,914	7,585	16,499
5	Darrang ... ..	3,418	110	198,581	178,733	377,314	13,386	35·47	6,513	6,158	12,671
6	Nowgong ... ..	3,843	79	154,938	148,658	303,596	8,905	29·33	3,693	3,479	7,172
7	Sibsagar ... ..	4,996	138	364,810	325,489	690,299	22,895	33·16	10,467	9,831	20,298
8	Lakhimpur ... ..	4,529	103	249,021	219,968	468,989	13,347	28·45	5,778	5,088	10,866
	Total ... ..	24,588	126	1,625,223	1,483,446	3,108,669	104,402	33·58	45,252	40,224	85,476
	Total for the Province	31,845	190	3,139,897	2,911,610	6,051,507	199,343	32·94	78,973	70,271	149,244



registered in the districts of Assam during the year 1914.

Ratio of births per 1,000 of population.			Number of males born to every 100 females born.	Excess of births over deaths per 1,000 of population.	Excess of deaths over births per 1,000 of population.	Mean ratio of births per 1,000 during previous five years.		
Male.	Female.	Total.				Male.	Female.	Total.
9	10	11	12	13	14	15	16	17
16.20	15.62	31.82	103	12.35	...	16.39	15.49	31.89
10.93	15.40	32.34	109	10.26	...	16.97	15.62	32.60
16.81	15.44	32.26	108	10.59	...	16.88	15.60	32.49
20.66	19.23	39.90	107	9.99	...	19.87	18.79	38.66
17.01	15.77	32.79	107	8.09	...	15.82	14.63	30.45
17.99	17.48	35.47	102	1.89	...	16.91	16.23	33.14
15.08	14.24	29.33	105	5.71	...	15.34	14.78	30.12
17.02	16.14	33.16	105	3.76	...	15.06	13.96	29.03
14.77	13.68	28.45	108	5.29	...	14.00	13.37	27.38
17.31	16.27	33.58	106	6.09	...	16.25	15.30	31.55
17.07	15.86	32.94	107	8.28	...	16.55	15.45	32.01

registered in the districts of Assam during the year 1914.

Number of deaths of males to every 100 deaths of females.	Deaths per 1,000 of population from—											Mean ratio of deaths per 1,000 during the previous five years.		
	Cholera.	Small-pox.	Plague.	Fever.	Dysentery and Diarrhoea.	Respiratory diseases.	Injuries.	All other causes.	All causes.			Male.	Female.	Total.
									Male.	Female.	Total.			
13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
107	.27	...	...	10.05	1.63	.90	.25	6.34	19.23	19.74	19.47	25.30	25.20	25.25
113	.89	.14	...	10.30	1.97	.60	.37	7.78	22.85	21.27	22.08	27.57	26.45	27.03
112	.79	.12	...	10.26	1.92	.65	.35	7.56	22.26	21.23	21.67	27.20	26.26	26.74
122	.54	.78	.001	26.46	.40	.10	.30	1.30	31.04	28.64	29.91	31.64	32.85	32.22
117	1.15	2.03	...	16.67	.97	.26	.24	3.35	26.26	23.09	24.70	25.49	24.55	25.02
105	2.20	.36	...	19.36	3.36	1.21	.33	6.64	32.79	34.45	33.58	34.05	35.81	34.88
106	2.89	.24	...	14.57	1.80	.19	.21	3.70	23.83	23.40	23.62	26.99	26.14	26.57
106	5.03	.18	...	13.37	4.95	.74	.20	4.86	28.69	30.20	29.40	21.67	22.79	22.20
113	1.20	.09	...	10.68	3.69	1.74	.26	5.47	23.20	23.13	23.16	24.99	26.47	25.68
112	2.22	.71	.0003	17.04	2.53	.67	.25	4.05	27.84	27.11	27.49	26.95	27.54	27.23
112	1.53	.42	.0001	13.75	2.23	.66	.30	5.75	25.15	24.13	24.66	27.07	26.91	26.99

## IMPERIAL STATEMENT No. III.—Deaths registered in the districts of

No.	District.			January.	February.	March.	April.	May.
1	2			3	4	5	6	7
	SURMA VALLEY.							
1	Cachar	...	...	1,030	595	556	765	773
2	Sylhet	...	...	6,604	4,439	3,890	3,682	3,867
	Total	...	...	7,634	5,034	4,446	4,447	4,640
	ASSAM VALLEY.							
3	Goalpara	...	...	1,233	987	1,339	1,404	1,584
4	Kamrup	...	...	814	2,564	1,092	1,058	1,614
5	Darrang	...	...	811	621	693	913	1,128
6	Nowgong	...	...	462	330	408	612	569
7	Sibsagar	...	...	901	877	699	990	1,393
8	Lakhimpur	...	...	733	547	630	630	852
	Total	...	...	4,954	5,926	4,861	5,607	7,140
	Total for the Province	...	...	12,588	10,960	9,307	10,054	11,780
	Ratio per 1,000	...	...	2.08	1.81	1.53	1.66	1.94

## IMPERIAL STATEMENT No. IV.—Deaths registered according to age in the

No.	District.			Under 1 year.		1 and under 5.		5 and under 10.		10 and under 15.	
				Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
1	2			3	4	5	6	7	8	9	10
	SURMA VALLEY.										
1	Cachar	...	...	1,220	1,079	503	419	292	255	230	181
2	Sylhet	...	...	8,659	6,793	3,330	3,036	1,480	1,213	922	674
	Total	...	...	9,879	7,872	3,833	3,505	1,772	1,468	1,152	855
	ASSAM VALLEY.										
3	Goalpara	...	...	3,072	2,396	1,486	1,369	740	536	311	259
4	Kamrup	...	...	2,178	1,799	1,520	1,403	899	743	565	420
5	Darrang	...	...	1,698	1,678	881	847	419	335	217	159
6	Nowgong	...	...	907	821	592	655	376	287	229	150
7	Sibsagar	...	...	1,978	1,645	1,774	1,703	861	788	472	324
8	Lakhimpur	...	...	985	866	893	887	385	344	237	167
	Total	...	...	10,818	9,205	7,146	6,874	3,680	3,033	2,031	1,479
	Total for the Province	...	...	20,697	17,077	10,979	10,379	5,452	4,501	3,183	2,334
	Population	...	...	106,330	106,901	356,689	374,837	491,403	482,110	333,555	264,628
	Ratio per 1,000	...	...	194.64	159.74	30.73	27.68	11.09	9.33	9.54	8.82



*Assam during each month of the year 1914.*

June.	July.	August.	September.	October.	November.	December.	Total.
8	9	10	11	12	13	14	15
668	810	560	814	772	748	1,066	9,157
4,242	3,815	3,433	4,185	5,229	5,345	5,880	54,611
4,910	4,625	3,993	4,999	6,001	6,093	6,946	63,768
2,164	1,642	1,307	1,318	1,635	1,524	1,833	17,970
1,704	1,531	1,224	1,237	1,200	1,194	1,267	16,499
1,514	1,351	1,194	1,112	1,222	1,046	1,066	12,671
918	608	578	431	646	863	757	7,172
2,173	1,891	1,684	2,068	2,584	2,570	2,468	20,238
1,011	1,080	855	1,099	1,212	1,004	1,213	10,866
9,484	8,103	6,842	7,265	8,499	8,191	8,604	85,476
14,394	12,728	10,835	12,264	14,500	14,284	15,550	149,244
2·37	2·13	1·79	2·02	2·39	2·36	2·56	24·66

*Districts of Assam during the year 1914.*

15 and under 20.		20 and under 30.		30 and under 40.		40 and under 50.		50 and under 60.		60 and upwards.	
Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
11	12	13	14	15	16	17	18	19	20	21	22
234	273	401	628	480	487	457	358	414	318	504	424
969	1,369	2,336	3,580	2,865	2,533	2,453	1,822	2,509	1,907	3,458	2,648
1,203	1,642	2,737	4,208	3,345	3,020	2,915	2,180	2,933	2,325	3,962	3,072
311	388	715	821	812	681	787	456	674	461	979	716
430	425	677	670	712	615	654	497	584	460	695	548
175	237	624	901	839	837	685	463	547	378	428	323
144	167	253	367	331	326	286	196	264	213	311	297
414	559	1,031	1,578	1,230	1,269	956	763	866	626	885	571
177	252	687	915	904	761	658	346	497	289	355	261
1,651	2,028	3,987	5,252	4,823	4,489	4,026	2,721	3,432	2,427	3,653	2,716
2,854	3,670	6,724	9,460	8,173	7,509	6,941	4,901	6,355	4,652	7,615	5,733
231,893	245,076	526,427	563,035	501,836	399,477	303,554	224,199	167,715	136,717	120,495	114,630
12·30	14·97	12·77	17·12	16·28	18·79	22·86	21·86	37·89	34·02	63·19	50·49

## IMPERIAL STATEMENT No. V.—Deaths registered according

Number.	District.	Population according to Census of 1911.					
		Christians.	Hindus.	Muhammadans.	Buddhists.	Other classes.	Total.
1	2	3	4	5	6	7	8
SURMA VALLEY.							
1	Cachar ... ..	1,117	305,035	155,653	24	8,538	470,167
2	Sylhet ... ..	1,512	1,098,950	1,364,739	20	7,450	2,472,671
	Total ... ..	2,629	1,403,985	1,520,392	44	15,788	2,942,838
ASSAM VALLEY.							
3	Goalpara ... ..	5,252	334,720	211,562	955	48,154	600,643
4	Kamrup ... ..	2,535	459,227	64,627	574	140,865	667,828
5	Darrang ... ..	1,913	245,341	20,305	609	109,146	377,314
6	Nowgong ... ..	1,373	177,795	15,689	41	108,698	303,596
7	Sibsagar ... ..	5,410	595,266	29,718	1,964	57,941	690,299
8	Lakhimpur ... ..	4,789	367,990	13,419	5,648	77,143	468,989
	Total ... ..	21,272	2,180,339	355,320	9,791	541,947	3,108,669
	Total for the Province ...	23,901	3,584,324	1,875,712	9,835	557,735	6,051,507

## IMPERIAL STATEMENT No. VI.—Deaths registered from different

Number.	District and town.	Population according to Census of 1911.	Cholera.	Small-pox.	Plague.	Fever.	Dysentery and diarrhoea.	Respiratory diseases.	In	
									Suicide.	
									Male.	Female.
1	2	3	4	5	6	7	8	9	10	11
DISTRICTS EXCLUDING TOWNS.										
SURMA VALLEY.										
1	Cachar ... ..	453,920	129	..	...	4,688	739	418	2	2
2	Sylhet ... ..	2,438,469	2,182	359	...	25,257	4,789	1,476	15	17
	Total ... ..	2,898,389	2,311	359	...	29,945	5,528	1,894	17	19
ASSAM VALLEY.										
3	Goalpara ... ..	588,871	297	468	...	15,817	225	53	9	3
4	Kamrup ... ..	644,608	756	1,324	...	10,797	618	164	38	21
5	Darrang ... ..	371,395	848	137	...	7,249	1,244	432	13	5
6	Nowgong ... ..	298,163	858	70	...	4,365	513	57	5	1
7	Sibsagar ... ..	674,485	3,413	127	...	9,062	3,367	505	17	11
8	Lakhimpur ... ..	452,781	493	44	...	4,790	1,666	795	15	7
	Total ... ..	3,030,303	6,670	2,170	...	52,080	7,633	2,006	97	48
	Total for districts, excluding towns.	5,928,692	8,981	2,529	...	82,025	13,161	3,900	114	67



to class in the districts of Assam during the year 1914.

Number of deaths registered.						Ratio of deaths per 1,000 of population.					
Christians.	Hindus.	Muhammadans.	Buddhists.	Other classes.	Total.	Christians.	Hindus.	Muhammadans.	Buddhists.	Other classes.	Total.
9	10	11	12	13	14	15	16	17	18	19	20
1	5,443	3,364	...	349	9,157	·89	17·84	21·61	...	41·85	19·47
17	23,392	30,511	2	689	54,611	11·24	21·28	22·35	100·00	92·48	22·08
19	28,835	33,875	2	1,038	63,768	6·84	20·53	22·28	45·45	65·74	21·67
170	10,196	5,648	1	1,955	17,970	32·33	30·46	26·69	1·04	40·59	29·91
16	12,490	1,634	...	2,359	16,499	6·31	27·19	25·28	...	16·74	24·70
39	7,246	600	...	4,786	12,671	20·38	29·53	29·54	...	43·84	33·58
25	4,653	586	4	1,899	7,172	18·20	23·19	37·35	97·56	17·47	23·62
129	16,952	741	29	2,447	20,298	23·84	28·47	24·93	14·76	42·23	29·40
58	8,597	300	33	1,873	10,866	12·11	23·36	22·35	6·72	24·27	23·16
437	60,139	9,509	72	15,319	85,476	20·54	27·58	26·76	7·35	23·26	27·49
455	88,974	43,384	74	16,357	149,244	19·03	24·82	23·12	7·52	29·32	24·66

causes in the districts and towns of the Province of Assam during the year 1914.

Injuries.						Ratio of deaths per 1,000 of population.												
Wounds or accidents.	Snakes and wild animals.	Rabies.	Total.	All other causes.	Total.	Cholera.	Small-pox.	Plague.	Fever.	Dysentery and diarrhoea.	Respiratory diseases.	Injuries.	All other causes.	From all causes.		Number.		
														For the year.	Mean of previous five years.			
12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
105	4	1	114	2,903	8,991	·28	...	...	10·19	1·60	·90	·24	6·31	19·54	25·46	1		
792	72	...	896	19,058	54,017	·89	·14	...	10·35	1·96	·60	·36	7·81	22·15	27·15	2		
897	76	1	1,010	21,961	63,003	·79	·12	...	10·33	1·96	·65	·34	7·57	21·74	26·88			
121	43	...	176	719	17,755	·50	·79	...	26·85	·38	·09	·29	1·22	130·15	32·44	3		
55	40	...	154	2,158	15,971	1·17	2·05	...	16·74	·95	·25	·23	3·34	24·77	25·14	4		
54	40	5	117	2,459	12,486	2·28	·36	...	19·51	3·34	1·16	·31	6·62	33·61	35·03	5		
34	25	...	65	1,077	7,005	2·87	·23	...	14·63	1·72	·19	·21	3·61	23·49	26·49	6		
83	21	8	140	3,285	19,899	5·06	·18	...	13·43	4·99	·74	·20	4·87	29·50	22·28	7		
76	20	...	118	2,483	10,394	1·09	·09	...	10·57	3·67	1·75	·26	5·43	22·95	25·79	8		
423	139	13	770	12,181	33,510	3·20	·71	...	17·18	2·51	·66	·25	4·01	27·55	27·36			
1,320	265	14	1,780	34,142	146,518	1·51	·42	...	13·83	2·22	·66	·30	5·75	24·71	27·21			

## IMPERIAL STATEMENT No. VI.—Deaths registered from different causes

Number.	District and town.	Population according to Census of 1911.	Cholera.	Small-pox.	Plague.	Fever.	Dysentery and diarrhoea.	Respiratory diseases.	In	
									Suicide.	
									Male.	Female.
1	2	3	4	5	6	7	8	9	10	11
TOWNS.										
SURMA VALLEY.										
1	Silchar ...	8,785	1	...	...	33	28	7	1	...
2	Hailakandi ...	1,462	...	...	...	7	3	...	...	...
3	Sylhet ...	14,457	11	...	...	134	65	17	...	1
4	Karimganj ...	6,512	1	...	...	21	8	1	...	...
5	Maulvi Bazar ...	2,369	14	...	...	11	7	1	...	...
6	Habiganj ...	6,244	1	1	...	23	16	4	...	...
7	Sunamganj ...	4,620	11	...	...	23	1	3	...	...
	Total ...	44,449	39	1	...	252	128	33	1	1
ASSAM VALLEY.										
8	Dhubri ...	5,808	10	1	...	28	5	7	...	...
9	Goalpara ...	5,964	18	1	1	51	15	6	...	1
10	Gauhati ...	12,481	10	15	...	138	11	5	...	2
11	Barpeta ...	10,739	8	22	...	199	24	5	1	...
12	Tezpur ...	5,355	20	...	...	50	20	24	...	...
13	Mangaldai ...	564	...	1	...	6	4	1	...	...
14	Nowgong ...	5,433	20	3	...	59	35	2	...	...
15	Sibsagar ...	5,764	57	1	...	69	19	4	...	...
16	Nazira ...	2,583	3	...	...	8	...	...	...	...
17	Jorhat ...	6,231	36	1	...	55	21	2	...	...
18	Golaghat ...	2,236	1	...	...	38	10	...	...	...
19	Dibrugarh ...	14,563	67	...	...	156	66	24	4	...
20	North Lakhimpur ...	1,645	...	...	...	65	...	...	...	...
	Total ...	78,366	250	45	1	922	230	80	5	3
	Total of towns ...	122,815	289	46	1	1,174	358	113	6	4
	Total for the Province ...	6,051,507	9,270	2,575	1	83,199	13,519	4,013	120	71



in the districts and towns of the Province of Assam during the year 1914—concluded.

Injuries.				All others causes.	Total.	Ratio of deaths per 1,000 of population.											Number.
Wounds or accidents.	Snakes and wild animals.	Rabies.	Total.			Cholera.	Small-pox.	Plague.	Fever.	Dysentery and diarrhoea.	Respiratory diseases.	Injuries.	All other causes.	From all causes.			
														For the year.	Mean of previous five years.		
12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
4	...	...	5	73	147	·11	...	...	3·75	3·18	·79	·56	8·30	16·73	16·73	1	
...	...	...	...	9	19	...	...	...	4·78	2·05	...	...	6·15	12·98	8·89	2	
9	...	...	10	136	373	·76	...	...	9·26	4·49	1·17	·69	9·40	25·80	21·86	3	
1	...	...	1	13	45	·15	...	...	3·22	1·22	·15	·15	1·99	6·91	12·74	4	
1	...	...	1	12	46	5·90	...	...	4·64	2·95	·42	·42	5·06	19·41	13·08	5	
8	...	...	8	32	85	·16	·16	...	3·68	2·56	·64	1·28	5·12	13·61	26·49	6	
1	...	...	1	6	45	2·38	...	...	4·97	·21	·64	·21	1·29	9·74	17·74	7	
24	...	..	26	281	760	·87	·02	...	5·66	2·88	·74	·58	6·32	17·09	17·99		
...	...	...	...	39	90	1·72	·17	...	4·82	·86	1·20	...	6·71	15·49	17·73	8	
3	...	2	6	27	125	3·01	·16	·16	8·55	2·51	1·00	1·00	4·52	20·95	23·97	9	
1	...	...	3	28	210	·80	1·20	...	11·05	·88	·40	·24	2·24	16·82	17·38	10	
2	2	...	5	55	318	·74	2·04	...	18·53	2·24	·46	·46	5·12	29·61	27·18	11	
7	...	...	7	47	168	3·73	...	...	9·23	3·73	4·48	1·30	8·77	31·37	26·89	12	
1	1	...	2	3	17	...	1·77	...	10·63	7·09	1·77	3·54	5·31	30·14	17·73	13	
...	...	...	...	48	167	3·68	·55	...	10·85	6·44	·36	...	8·83	30·73	31·10	14	
2	...	...	2	4	156	9·88	·17	...	11·97	3·29	·69	·34	·69	27·06	19·25	15	
...	...	...	...	...	11	1·16	...	...	3·09	...	...	...	...	4·25	Data not available.	16	
...	1	...	1	50	166	6·88	·19	...	10·51	4·01	·38	·19	9·55	31·71	10·05	17	
...	...	...	...	17	66	·44	...	...	16·99	4·47	...	...	7·60	29·51	20·57	18	
3	1	...	8	81	402	4·60	...	...	10·71	4·53	1·64	·54	5·56	27·60	22·79	19	
...	...	...	...	5	70	...	...	...	39·51	...	...	...	3·03	42·55	20·67	20	
19	5	2	34	404	1,966	3·19	·57	·01	11·76	2·93	1·02	·43	5·15	25·08	22·23		
43	5	2	60	685	2,726	2·35	·37	·008	9·56	2·91	·92	·48	5·57	22·19	20·66		
1,363	270	16	1,840	34,827	149,244	1·53	·42	·0001	13·75	2·23	·66	·30	5·75	24·66	26·99		

## IMPERIAL STATEMENT No. VII.—Deaths registered from Cholera in the

Number.	District.	Circles of Registration.		Villages.		January.	February.	March.	April.	May.
		Number in each district.	Number from which deaths from cholera were reported.	Number in each district.	Number from which deaths from cholera were reported.					
1	2	3	4	5	6	7	8	9	10	11
SURMA VALLEY.										
1	Cachar ... ..	8	5	1,103	18	51	4	3	8	24
2	Sylhet ... ..	22	22	10,781	507	517	225	208	213	262
	Total ... ..	30	27	11,884	525	568	229	211	221	286
ASSAM VALLEY.										
3	Goalpara ... ..	21	17	2,137	77	23	14	10	23	12
4	Kamrup ... ..	9	8	1,954	31*	19	171	83	34	45
5	Darrang ... ..	12	10	1,406	170	3	4	12	44	112
6	Nowgong ... ..	7	7	1,495	31*	...	...	1	34	29
7	Sibsagar ... ..	11	10	2,143	377	10	10	9	50	76
8	Lakhimpur ... ..	7	6	1,702	Not available.	2	...	4	9	22
	Total ... ..	67	58	10,837	686	57	199	119	194	296
	Total for the Province ...	97	85	22,721	1,211	625	428	330	415	582

\* Mauzas.

## IMPERIAL STATEMENT No. VIII.—Deaths registered from

Number.	District.	Circles of Registration.		Villages.		January.	February.	March.	April.	May.	June.	July.
		Number in each district.	Number from which deaths from small-pox were reported.	Number in each district.	Number from which deaths from small-pox were reported.							
1	2	3	4	5	6	7	8	9	10	11	12	13
SURMA VALLEY.												
1	Cachar ... ..	8	...	1,103	...	...	...	...	...	...	...	...
2	Sylhet ... ..	22	12	10,781	199	66	28	28	42	38	30	38
	Total ... ..	30	12	11,884	199	66	28	28	42	38	30	38
ASSAM VALLEY.												
3	Goalpara ... ..	21	16	2,137	77	15	24	62	89	95	59	50
4	Kamrup ... ..	9	7	1,954	31*	38	91	195	143	193	168	129
5	Darrang ... ..	12	8	1,406	170	5	1	8	12	18	8	15
6	Nowgong ... ..	7	5	1,495	31*	14	5	2	3	3	16	3
7	Sibsagar ... ..	11	8	2,143	377	3	11	7	12	15	14	10
8	Lakhimpur ... ..	7	5	1,702	Not available.	1	...	1	2	...	10	3
	Total ... ..	67	49	10,837	686	76	132	275	261	324	275	210
	Total for the Province ...	97	61	22,721	885	142	160	303	303	362	305	248

\* Mauzas.



*districts of Assam during each month of the year 1914.*

June.	July.	August.	September.	October.	November.	December.	Total.			Total ratio of deaths per 1,000 of population.			Mean ratio per 1,000 of previous five years.	Number.
							Male.	Female.	Total.	Male.	Female.	Total.		
12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
22	1	5	5	5	2	...	77	53	130	·31	·23	·27	2·30	1
104	18	5	13	89	161	405	1,232	988	2,220	·97	·82	·89	3·28	2
126	19	10	18	94	163	405	1,309	1,041	2,350	·86	·72	·79	3·12	
7	2	1	1	6	63	163	169	156	325	·53	·55	·54	1·68	3
41	194	95	32	10	27	23	433	341	774	1·27	1·03	1·15	3·52	4
303	198	92	37	12	1	50	475	393	868	2·39	2·19	2·30	2·55	5
102	31	35	19	60	302	265	447	431	878	2·88	2·89	2·89	3·72	6
430	257	158	311	560	894	745	1,762	1,748	3,510	4·82	5·37	5·08	1·53	7
23	25	24	96	139	95	126	289	276	565	1·16	1·23	1·20	·94	8
906	707	405	496	787	1,382	1,372	3,575	3,345	6,920	2·19	2·25	2·22	2·24	
1,032	726	415	514	881	1,545	1,777	4,884	4,386	9,270	1·55	1·50	1·53	2·66	

*Small-pox in the districts of Assam during each month of the year 1914.*

August.	September.	October.	November.	December.	Total.			Number of deaths among children.		Total ratio of deaths per 1,000 of population.			Mean ratio per 1,000 of previous five years.	Number.
					Male.	Female.	Total.	Under 1 year.	One to 10 years.	Male.	Female.	Total.		
14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
...	...	...	...	...	...	...	...	...	...	...	...	...	·01	1
13	16	13	16	32	178	182	360	...	...	·14	·15	·14	·35	2
13	16	13	16	32	178	182	360	...	...	·11	·12	·12	·29	
18	16	11	12	19	233	187	470	33	78	·88	·66	·78	·49	3
65	91	63	83	102	748	613	1,361	542	646	2·20	1·86	2·03	1·10	4
19	31	9	9	3	71	67	138	42	19	·35	·37	·36	·73	5
6	3	2	2	12	35	38	73	15	30	·22	·25	·24	1·58	6
4	18	10	6	19	68	61	129	50	58	·18	·18	·18	·25	7
7	10	9	...	1	24	20	44	...	6	·09	·09	·09	·04	8
119	171	104	112	156	1,229	986	2,215	682	837	·75	·66	·71	·64	
132	187	117	128	188	1,407	1,168	2,575	682	837	·45	·39	·42	·47	

## IMPERIAL STATEMENT No IX.—Deaths registered from Fever

Number.	District.			Circles of Registration.		Villages.		January.	February.	March.	April.	May.
				Number in each district.	Number from which deaths from fevers were reported.	Number in each district.	Number from which deaths from fevers were reported.					
1	2			3	4	5	6	7	8	9	10	11
	SURMA VALLEY.											
1	Cachar	...	...	8	8	1,103	412	474	333	291	428	429
2	Sylhet	...	...	22	22	10,781	8,089	2,717	1,888	1,663	1,771	1,848
	Total	...	...	30	30	11,884	8,501	3,191	2,221	1,954	2,199	2,277
	ASSAM VALLEY.											
3	Goalpara	...	...	21	21	2,137	1,947	1,112	874	1,167	1,222	1,370
4	Kamrup	...	...	9	9	1,954	53*	552	1,922	734	697	1,125
5	Darrang	...	...	12	12	1,406	1,106	515	377	393	576	656
6	Nowgong	...	...	7	7	1,495	81*	316	234	312	431	413
7	Sibsagar	...	...	11	11	2,143	984	477	484	381	500	755
8	Lakhimpur	...	...	7	7	1,702	Not available.	325	270	341	262	425
	Total	...	...	67	67	10,837	4,171	3,297	4,161	3,328	3,688	4,754
	Total for the Province	...	...	97	97	22,721	12,672	6,488	6,382	5,282	5,887	7,031

\* Mauzas.

## IMPERIAL STATEMENT No. X.—Deaths registered from

Number.	District.			Circles of Registration.		Villages.		January.	February.	March.	April.	May.
				Number in each district.	Number from which deaths from dysentery and diarrhoea were reported.	Number in each district.	Number from which deaths from dysentery and diarrhoea were reported.					
1	2			3	4	5	6	7	8	9	10	11
	SURMA VALLEY.											
1	Cachar	...	...	8	7	1,103	168	96	37	37	52	81
2	Sylhet	...	...	22	22	10,781	2,540	713	463	363	287	366
	Total	...	...	30	29	11,884	2,708	809	500	400	339	447
	ASSAM VALLEY.											
3	Goalpara	...	...	21	18	2,137	117	4	10	12	15	26
4	Kamrup	...	...	9	9	1,954	35*	34	55	35	43	50
5	Darrang	...	...	12	11	1,406	327	46	35	55	89	142
6	Nowgong	...	...	7	7	1,495	51*	32	11	22	35	53
7	Sibsagar	...	...	11	10	2,143	1,119	131	112	95	153	262
8	Lakhimpur	...	...	7	6	1,702	Not available.	108	44	65	85	120
	Total	...	...	67	61	10,837	1,649	355	267	284	420	653
	Total for the Province...	...	...	97	90	22,721	4,357	1,164	767	684	759	1,100

\* Mauzas.



*in the districts of Assam during each month of the year 1914.*

June.	July.	August.	September.	October.	November.	December.	Total.			Total ratio of deaths per 1,000 of population.			Mean ratio per 1,000 of previous five years.	Number.
							Male.	Female.	Total.	Male.	Female.	Total.		
12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
407	488	296	389	317	336	540	2,417	2,311	4,728	9·81	10·31	10·05	12·03	1
2,286	2,232	1,792	1,944	2,374	2,471	2,483	13,708	11,761	25,469	10·80	9·76	10·30	12·01	2
2,693	2,720	2,088	2,333	2,691	2,807	3,023	16,125	14,072	30,197	10·64	9·85	10·26	12·01	
1,955	1,463	1,176	1,197	1,502	1,333	1,520	8,739	7,157	15,896	27·44	25·36	26·46	27·12	3
1,198	932	740	776	756	797	905	6,029	5,105	11,134	17·76	15·54	16·67	15·90	4
826	702	654	599	699	614	694	3,721	3,584	7,305	18·73	20·05	19·36	19·53	5
552	408	391	274	375	377	341	2,259	2,165	4,424	14·58	14·56	14·57	15·82	6
945	937	844	1,018	1,127	830	934	4,809	4,423	9,232	13·18	13·58	13·37	10·78	7
540	505	383	502	464	420	564	2,657	2,354	5,011	10·66	10·70	10·68	11·84	8
6,016	4,952	4,188	4,366	4,923	4,371	4,958	28,214	24,788	53,002	17·36	16·71	17·04	16·75	
8,709	7,672	6,276	6,699	7,614	7,178	7,981	44,339	38,860	83,199	14·12	13·34	13·75	14·45	

*Dysentery and Diarrhœa in the districts of Assam during each month of the year 1914.*

June.	July.	August.	September.	October.	November.	December.	Total.			Total ratio of deaths per 1,000 of population.			Mean ratio per 1,000 of previous five years.	Number.
							Male.	Female.	Total.	Male.	Female.	Total.		
12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
31	57	25	95	99	73	87	492	338	770	1·75	1·50	1·63	2·75	1
365	282	263	384	454	483	463	2,643	2,243	4,886	2·08	1·86	1·97	2·15	2
396	339	288	479	553	556	550	3,075	2,581	5,656	2·03	1·80	1·92	2·25	
47	29	19	25	19	16	23	145	100	245	·45	·35	·40	·40	3
115	47	86	53	60	45	30	359	294	653	1·05	·89	·97	1·14	4
135	151	129	141	137	123	85	721	547	1,268	3·63	3·05	3·36	4·66	5
110	76	48	41	60	36	24	303	245	548	1·95	1·64	1·80	1·76	6
478	340	331	347	445	380	343	1,880	1,537	3,417	5·15	4·72	4·95	4·24	7
160	211	179	179	231	189	161	954	778	1,732	3·83	3·53	3·69	4·86	8
1,045	854	792	786	952	789	666	4,362	3,501	7,863	2·68	2·36	2·53	2·73	
1,441	1,193	1,080	1,265	1,505	1,345	1,216	7,437	6,182	13,519	2·37	2·08	2·23	2·50	

## IMPERIAL STATEMENT No. XI.—Deaths registered from

Number.	District.	Circles of Registration.		Villages.		January.	February.	March.	April.	May.
		Number in each district.	Number from which deaths from respiratory diseases were reported.	Number in each district.	Number from which deaths from respiratory diseases were reported.					
1	2	3	4	5	6	7	8	9	10	11
	SURMA VALLEY.									
1	Cachar ...	8	6	1,103	94	35	19	15	32	31
2	Sylhet ...	22	21	10,781	527	145	149	97	88	113
	Total ...	30	27	11,884	621	180	168	112	120	144
	ASSAM VALLEY.									
3	Goalpara ...	21	13	2,137	41	4	7	9	6	4
4	Kamrup ...	9	7	1,954	24*	19	...	7	14	9
5	Darrang ...	12	10	1,406	155	48	43	36	31	27
6	Nowgong ...	7	7	1,495	12*	4	6	4	1	3
7	Sibsagar ...	11	8	2,143	76	50	38	30	29	47
8	Lakhimpur ...	7	6	1,702	Not available.	76	62	77	74	71
	Total ...	67	51	10,837	308	201	156	163	155	161
	Total for the Province ...	97	78	22,721	929	381	324	275	275	305

\* Manzass.

## IMPERIAL STATEMENT No. XII.—Deaths registered from Plague

Number.	District.	Circles of Registration.		Villages.		January.	February.	March.	April.	May.
		Number in each district.	Number from which deaths from plague were reported.	Number in each district.	Number from which deaths from plague were reported.					
1	2	3	4	5	6	7	8	9	10	11
	SURMA VALLEY.									
1	Cachar ...	8	...	1,103	...	...	...	...	...	...
2	Sylhet ...	22	...	10,781	...	...	...	...	...	...
	Total ...	30	...	11,884	...	...	...	...	...	...
	ASSAM VALLEY.									
3	Goalpara ...	21	1	2,137	1	1	...	...	...	...
4	Kamrup ...	9	...	1,954	...	...	...	...	...	...
5	Darrang ...	12	...	1,406	...	...	...	...	...	...
6	Nowgong ...	7	...	1,495	...	...	...	...	...	...
7	Sibsagar ...	11	...	2,143	...	...	...	...	...	...
8	Lakhimpur ...	7	...	1,702	...	...	...	...	...	...
	Total ...	67	1	10,837	1	1	...	...	...	...
	Total for the Province ...	97	1	22,721	1	1	...	...	...	...



*Respiratory diseases in the districts of Assam during each month of the year 1914.*

June.	July.	August.	September.	October.	November.	December.	Total.			Total ratio of deaths per 1,000 of population.			Mean ratio per 1,000 of previous five years.	Number.
							Male.	Female.	Total.	Male.	Female.	Total.		
12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
29	24	30	20	34	82	74	245	180	425	·99	·80	·90	·71	1
119	83	110	103	155	147	193	947	555	1,502	·74	·46	·60	·47	2
148	107	140	123	189	229	267	1,192	735	1,927	·79	·51	·65	·51	
5	8	10	3	4	4	2	43	23	66	·13	·08	·10	·09	3
15	23	13	16	18	24	16	103	71	174	·30	·21	·26	·28	4
25	36	43	40	58	53	37	299	158	457	1·50	·83	1·21	1·10	5
6	1	5	1	14	10	4	34	25	59	·21	·16	·19	·23	6
42	53	42	29	50	51	50	318	193	511	·87	·59	·74	·75	7
69	84	73	55	62	46	70	501	318	819	2·01	1·44	1·74	1·88	8
162	205	186	144	186	183	179	1,293	788	2,086	·79	·53	·67	·68	
310	312	326	267	375	417	446	2,490	1,523	4,013	·79	·52	·66	·60	

*in the districts of Assam during each month of the year 1914.*

June.	July.	August.	September.	October.	November.	December.	Total.			Ratio of deaths per 1,000 of population.			Mean ratio per 1,000 of previous five years.	Number.
							Male.	Female.	Total.	Male.	Female.	Total.		
12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
...	...	...	...	...	...	...	...	...	...	...	...	...	...	
...	...	...	...	...	...	...	...	1	1	...	·003	·001	...	3
...	...	...	...	...	...	...	...	...	...	...	...	...	...	4
...	...	...	...	...	...	...	...	...	...	...	...	...	...	5
...	...	...	...	...	...	...	...	...	...	...	...	...	...	6
...	...	...	...	...	...	...	...	...	...	...	...	...	...	7
...	...	...	...	...	...	...	...	...	...	...	...	...	...	8
...	...	...	...	...	...	...	...	1	1	...	·0006	·0003	...	
...	...	...	...	...	...	...	...	1	1	...	·0003	·0001	...	

## APPENDIX II.

## PROVINCIAL.

Statement showing details of registration in compulsory areas.

Compulsory registration area.			Population according to Census of 1911.	Estimated births at 286 per 1,000 married women between the ages of 15 and 40.	Number of births registered during the year.	Estimated birth-rate per mille.	Registered birth-rate per mille.	Number of deaths registered during the year.		Death-rate per mille.		Number of prosecutions under Act IV (B.C.) of 1873.	Number of convictions.
1			2	3	4	5	6	Including deaths in hospitals.	Excluding deaths in hospitals.	Including deaths in hospitals.	Excluding deaths in hospitals.	11	12
Silchar	...	...	8,785	296	187	33.69	21.28	147	104	16.73	11.83	33	24
Hailakandi	...	...	1,462	45	14	30.78	9.57	19	7	12.98	4.78	6	5
Sylhet	...	...	14,457	582	399	40.26	27.59	373	331	25.80	22.89	53	12
Karimganj	...	...	6,512	260	39	39.92	5.98	45	30	6.91	4.60	2	2
Maulvi Bazar	...	...	2,369	77	41	32.50	17.30	46	39	19.41	16.46	...	...
Habiganj	...	...	6,244	222	120	35.55	19.21	85	72	13.61	11.53	...	...
Sunamganj	...	...	4,620	145	48	31.38	10.38	45	34	9.74	7.36	...	...
Dhubri	...	...	5,808	191	147	32.88	25.30	90	56	15.49	9.64	15	12
Goalpara	...	...	5,964	197	149	33.03	24.93	125	106	20.95	17.77	9	6
Gauhati	...	...	12,481	409	275	32.77	22.03	210	128	16.82	10.25	9	8
Barpeta	...	...	10,739	462	638	44.88	59.40	318	314	29.61	29.24	8	7
Tezpur	...	...	5,355	167	133	31.18	24.83	168	116	31.37	21.66	7	5
Mangaldai	...	...	564	*	8	*	14.18	17	8	30.14	14.18	...	...
Nowgong	...	...	5,433	185	162	34.05	29.81	167	138	30.73	25.40	7	4
Sibsagar	...	...	5,764	213	165	36.95	28.62	156	124	27.06	21.51	36	33
Nazira	...	...	2,583	*	20	*	7.74	11	11	4.25	4.25	50	45
Jorhat	...	...	5,231	192	224	36.70	42.82	166	112	31.71	21.41	98	85
Golaghat	...	...	2,236	88	113	39.35	50.53	66	37	29.51	16.54	...	...
Dibrugarh	...	...	14,563	543	339	37.28	23.27	402	232	27.60	15.93	...	...
North Lakhimpur...	...	...	1,645	*	51	*	31.00	70	61	42.55	37.08	...	...
Total	...	...	122,815	4,294	3,272	34.96	26.64	2,726	2,060	22.19	16.77	333	248

\* Not available.



## Resolution on the Annual Sanitary Report of the Province of Assam for the year 1914.

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*Extract from the Proceedings of the Chief Commissioner of Assam in the Municipal Department, No. 2814M., dated the 14th June 1915.*

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READ—

The Sanitary Report for the year 1914.

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### R E S O L U T I O N .

The year under report was on the whole an unusually healthy one. The birth-rate was slightly above, and the death-rate substantially below, the average for the preceding five years, and the mortality from the more serious epidemic diseases was comparatively low. The large decrease in the number of deaths from *kala-azar* and the check to the upward tendency of the mortality from that disease, which has been a cause of anxiety during recent years in the districts of Nowgong and Goalpara, are particularly satisfactory, and afford grounds for the hope that the measures taken to eradicate the disease from the province will prove successful. The death-rate from fever was slightly above the decennial average, and it is a matter of much regret that it was found necessary to recall to military duty the distinguished officer who was deputed by the Government of India to undertake the malaria research work contemplated by the Local Administration.

In view of the comparatively high mortality from small-pox at Barpeta, the question of the introduction of compulsory vaccination into that town, where, owing to the scruples of the Mahapurushia sect, it has hitherto not been enforced, is under consideration.

2. Sir Archdale Earle regrets to notice that the registration of vital statistics is in many districts still very imperfectly performed. In certain areas where the recorded rates of births and deaths were suspiciously low during the preceding year, special enquiries revealed large numbers of omissions, and it is more than probable that the low records reported from several areas during the year under review are due to defective registration. The large percentage of omissions discovered in certain areas of compulsory registration, notably in the Surma Valley, and the failure to deal adequately with the defaulters are most unsatisfactory and steps will be taken to bring about a more correct appreciation on the part of the officers concerned of the importance of the subject. So far as urban registration is concerned, the appointment of medical officers as Municipal Sanitary Inspectors and the utilisation of their services in the registration of vital statistics—measures which were introduced in the course of the year under review—should effect a marked improvement in future. As regards rural areas, the suggestions of the Sanitary Commissioner will receive careful and early consideration.

3. Piped water-supply projects for the towns of Sylhet, Tezpur, Dhubri and Cherrapunji were approved during the year, and substantial grants were made by the Local Administration towards their execution. Less ambitious schemes of water-supply by the construction or improvement of tanks were sanctioned for Golaghat, Nazira and Jowai, and were partly or wholly financed from Government funds. Grants were also made towards the improvement of the conservancy system in Sylhet, Dibrugarh and Imphal, and towards the improvement of drainage in Shillong, Nowgong and Golaghat. Sir Archdale Earle is pleased to hear that the necessity for improved sanitation at the cost of enhanced taxation is realised in many municipalities and that a substantial increase of expenditure occurred under the head "Conservancy." The Sanitary Commissioner's suggestion that only charges for conservancy purposes proper should find entry under this head will receive attention.

4. Good progress was generally made during the year in the improvement of rural water-supply with the Government grant of Rs. 10,000 made to each Local Board in 1913, and a start was also made with a special scheme for the improvement of the water-supply along the banks of the Kallang river in Nowgong, an area especially liable to water-borne diseases. The five-year programmes of water-supply, which were prepared by all Local Boards as the result of the conference on rural water-supply which was held in Shillong in 1913, were finally approved after the close of the year under report and the first year's work has been financed from the current year's budget.

5. The continued expansion of the sale of quinine "treatments" is eminently satisfactory and any scheme submitted by the Sanitary Commissioner for popularising the drug will be sympathetically received.

6. The Secretary of State has sanctioned the Chief Commissioner's proposal for the appointment of a separate Sanitary Commissioner for Assam, and Sir Archdale Earle expects to be able to provide the necessary funds and give effect to the scheme at a very early date.

7. In conclusion, the Chief Commissioner desires to express his obligations to the Hon'ble Colonel Banatvala for his careful administration of the Department, to Major T. C. McCombie Young for the zeal and energy which he has displayed in the discharge of his duties as Deputy Sanitary Commissioner, and to the members of the Sanitary Board for their assistance in connection with the many important schemes which came under their consideration during the year.

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ORDERED that the Resolution and the Report be published in the *Assam Gazette*.

By order of the Chief Commissioner of Assam,

A. W. BOTHAM,

*Second Secretary to the Chief Commissioner of Assam.*





